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TISDALE HYDRAULIC STUDY
FOR
CANADA - SASKATCHEWAN
FLOOD DAMAGE REDUCTION PROGRAM

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Saskatchewan Water Corporation
Victoria Place
111 Fairford Street, East
Moose Jaw, Saskatchewan
S6H 7X5

Attention: **Mr. W. L. Dybvig, P.Eng.**
Manager, Basin Planning

Dear Sir:

Reference: **Tisdale Hydraulic Study**

Stanley Associates Engineering Ltd. is pleased to submit this report for the Flood Damage Reduction Program. Accompanying the report are two sets of the 1:2000 scale maps and a copy of all the computer runs used in this study. The maps show the floodlines for the 1:10, 1:50, 1:100 and 1:500 flood discharges. Also shown is the 1:500 event under floodway encroachment conditions and the location of the 0.30 m rise, 1 m depth and 1 m/s velocity lines.

We have enjoyed working on this assignment, and we would be pleased to discuss any items in further detail with you.

Yours truly,

STANLEY ASSOCIATES ENGINEERING LTD.

R. D. (Rick) Carnduff, P.Eng.
Manager, Water Resources

AS/bv

Enclosure

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1.0 INTRODUCTION

1.1 Background

The General Agreement Respecting Flood Damage Reduction between the Governments of Canada and Saskatchewan was signed April 13, 1977 initiating the Flood Damage Reduction Program (FDRP) in Saskatchewan. The program is intended to reduce flood damage by identifying existing flood prone development and then promoting floodplain management practices which reduce potential flood damage within the floodplain.

In November of 1986 Stanley Associates Engineering Ltd. (SAEL) was awarded a contract by the Saskatchewan Water Corporation (Sask Water) to complete a hydraulic study for the reach of the Doghide River flowing through the community of Tisdale, Saskatchewan. The purpose of the study was to define water surface profiles for the historic flood (1957) and a 1:500 (design) flood under existing and floodway conditions for the study area. The water surface profiles were then used to identify flooded areas by plotting water surface elevations on 1:2000 scale, 0.5 metre contour interval mapping provided by Sask Water.

The floodway - floodway fringe concept is illustrated in Figure 1. The following criteria were used to determine the border of these two components of the flood hazard area:

- Water in the floodway fringe shall not exceed a depth of 1 m.
- Water in the floodway fringe shall not exceed a velocity of 1 m/s.
- The design flood (1:500) must be conveyed within the floodway without causing an increase in upstream water surface elevations greater than 0.30 m.

2.0 GENERAL

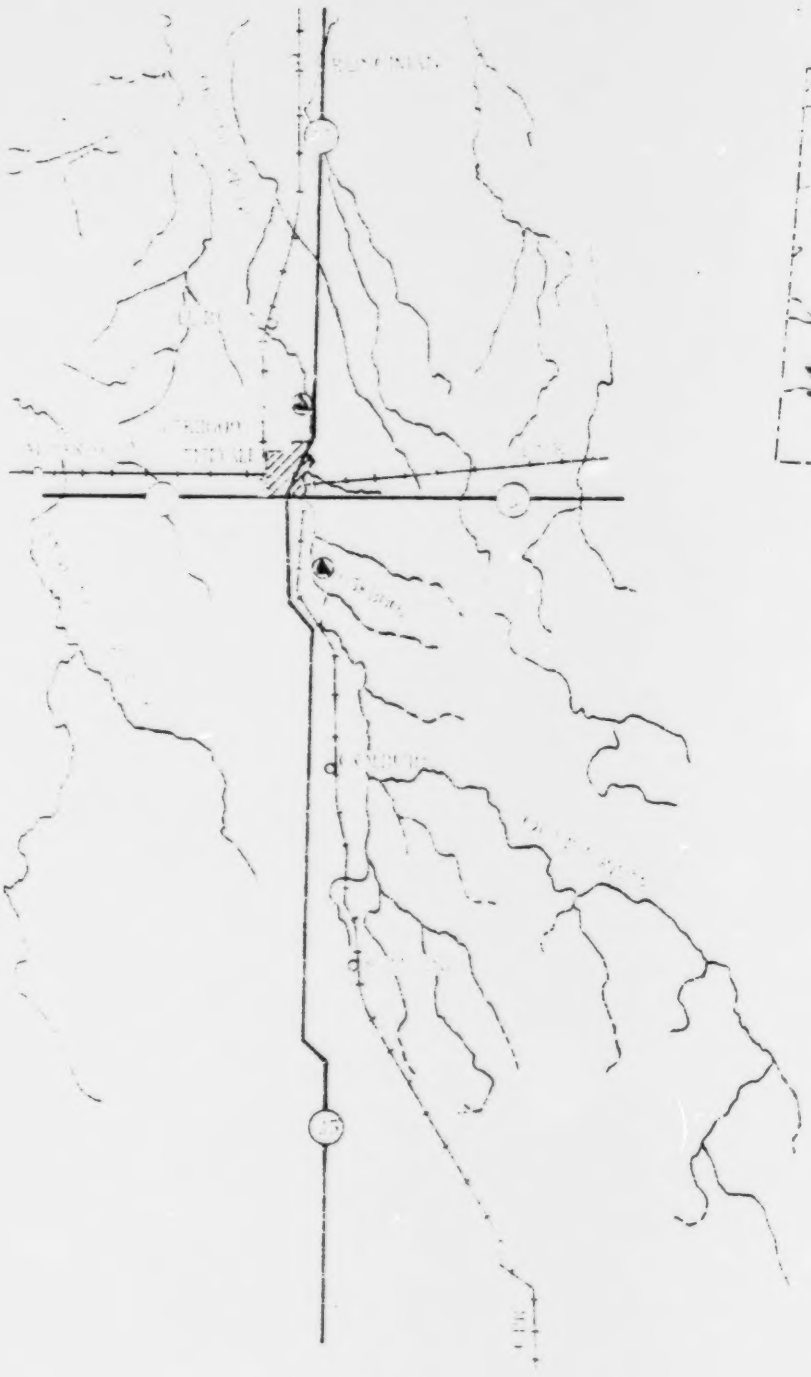
2.1 Study Area

Tisdale is a community of 3500 people situated in east-central Saskatchewan on the banks of the Doghide River as shown in Figure 2. The community serves as the centre of commercial activity for the surrounding agricultural district.

The Doghide River is part of the Carrot River Basin. The Doghide River flows from its headwaters, located a few miles upstream of Tisdale, in a northerly direction approximately 15 km where it joins the Leather River and then the Carrot River. The Carrot River flows into the Saskatchewan River near The Pas, just east of the Saskatchewan - Manitoba border.

The Doghide River is a sinuous, meandering stream confined in a shallow valley. The valley is approximately 20 metres deep at its deepest point in the study area. Oxbow lakes bound the river in the floodplain. The channel is typically less than 10 metres in width and has an average depth of a few metres. The river has an average bed slope of 0.0013 through the study area.

The stream bed of the Doghide River consists of washed alluvial material with rip-rap and erosion protection lining the bed and banks in select locations. The banks are well vegetated with thick brush, except at the Tisdale Municipal Golf Course which bounds the river on the east bank area through the community. The overbank area containing the Golf Course is well treed.



KEY MAP

FIGURE 2

HYDRAULIC STUDY

SITE PLAN

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2.2 Hydrology and Hydrometric Data

Design event discharges used in this investigation were supplied by the Saskatchewan Water Corporation. These design flows were derived by the Prairie Farm Rehabilitation Administration (PFRA) in their 1983 hydrology study which was undertaken under the auspices of the FDRP. The discharge for the flood of record (1957) was also adopted from this study.

Hydrometric data for the Doghide River are available for the discontinuous period of record dating back to 1912 from three stations local to Tisdale. Of particular interest is Water Survey of Canada (WSC) station 05KB009 which is located within the study area on the Highway No. 35 bridge approximately 1 km north of Tisdale. The station was originally installed and operated by the Saskatchewan Department of Agriculture, Conservation and Development Branch in 1965 and provided data until its decommission in 1976. Hydrometric data for the Doghide River at three river crossings at Tisdale was gathered in 1979 and 1980 by Saskatchewan Environment's Hydrology Branch. Rating curves for each of these stations, as developed by the respective agencies, were used in the calibration of the hydraulic model which, in turn, was used to determine water surface profiles discussed in Section 3.3.

2.3 History of Flooding

As is characteristic of the Carrot River Basin, significant floods occur during spring runoff and are associated with snowmelt. More frequent, less significant floods are caused by summer rains. Flooding through Tisdale is well documented by both PFRA and Environment Canada. The flood of record occurred in 1957 with less severe flooding taking place in 1972 and 1974. Photographs 1 to 4 illustrate these events.

There appears to be little evidence of problems created by ice blockage in the spring. The reach within the study area is ephemeral in nature with the great majority of annual flow occurring during spring runoff. As a result, the channel is often dry in the fall leaving little opportunity for a thick competent ice cover to form . Also, because

Photograph 1: Doghide River at Highway No. 3, April 24, 1974
(Photo Supplied Courtesy of Environment Canada, WSC)

Photograph 2: Doghide River (Looking East) at 105th Avenue During Spring Runoff
(Photo Supplied courtesy of Mr. Wilfred Wiser, Resident)

Photograph 3: Doghide River at Old Highway No. 3 Bridge on April 24, 1957 (Department of Northern Affairs and National Resources, 1965)

Photograph 4: Doghide River at Highway No. 35 Bridge Looking Downstream on April 24, 1972 (Environment Canada, 1977)

of the location of the study reach within the well developed watershed, flood flows are "peaky" in nature allowing a rapid and complete breakup of any ice cover than may exist.

2.4 Topographic Mapping - Cross-Section Data

Mapping was produced by the FDRP and is based on 1980 aerial photography. Two sets of 1:2000 scale 0.5 metre contour interval maps were provided to SAEL by Sask Water. Each set, which consists of 11 maps, was reproduced on a mylar base.

Field surveys consisting of level circuits and 24 river cross-sections were conducted by SAEL between October 21 and 30, 1986. Cross-sections shown in Appendix A were located by visually determining their position on the 1:2000 mapping during the field survey. The purpose of the field survey was to define channel geometry that could not be obtained from the 1:2000 scale mapping. The cross-sections thus supplement the topographic maps. The channel cross-sections and extensions were selected so as to maintain a perpendicular orientation to the expected flow direction. At each section irregular depressions or rises, which would not contribute to channel conveyance, were excluded from the cross-section geometry.

During the field survey, a number of photographs of the channel and adjacent floodplain were taken to aid calibration of the computer models. This phase of the study is discussed in Section 3.0.

3.0 WATER SURFACE PROFILES

3.1 HEC-2 Computer Program

The HEC-2 Computer Program #723-X6-L202A was used to generate water surface profiles in this study. The model was developed by the United States Army Corps of Engineers at the Hydrologic Engineering Center in Davis, California. The model runs were executed on an IBM-AT equipped with dual disk drives, 60 Mb hard disk and 1.6 Mb RAM.

The HEC-2 model was first developed in 1976 and has since incorporated a number of modifications. The latest version which was used in this study was produced in 1985 for personal computers (PC). The program calculates water surface profiles for steady state, gradually varied flow conditions. Calculation of the profiles is based on the Standard Step Method. The program is capable of modelling the effects of structures such as bridges, culverts and weirs. In addition, the HEC-2 program can be used to assess the impact of ice conditions.

Input data for the HEC-2 program includes the following:

- Channel cross-sections in co-ordinate form (i.e. station, elevation).
- Estimated values of Manning's roughness coefficient "n" for channel and overbank flow areas.
- Coefficients representing contraction and expansion losses for each reach of the channel.
- Estimates of head loss coefficients for structural river crossings and ice covers.

3.2 River Crossings

Bridges for vehicular and pedestrian movements are generally not designed to pass the 1:500 flow which is used for delineation of the flood hazard areas. The structures often impede flows along the natural water course and floodplain. River crossings with small spans or support piers are also susceptible to ice and debris clogging which can further constrict flood flows. Therefore, it is important to devote due attention to river crossings and their hydraulic impact upon the water course.

There are seven bridge crossings in the study area. All crossings where modelled using the normal bridge routine for low flow conditions as outlined in the HEC-2 User's Manual. The special bridge mode was used for higher flow conditions which results in pressure or weir flow on the bridge decks. A brief description of the river crossings follows.

In 1948, the Highway No. 3 Bridge was constructed at it's present location. As part of the project, the Doghide River was channelized and a 21 m reinforced concrete arch bridge with a suspended floor was constructed. The bridge is shown in Photograph 3. In 1972 the bridge was replaced with a 2 span precast concrete deck bridge with timber piers as shown in Photograph 1.

The walking bridge is located approximately 200 m downstream of the existing Highway No. 3 bridge. This is the pre-1948 Highway No. 3 bridge location. Very little is known about this former structure other than it was a steel structure. It was dismantled with exception of the reinforced concrete abutments, which now support the walkway. The walkway is approximately 1 m wide and has a span of 17 m.

The CNR bridge is located along 100th Avenue and is 350 m downstream of the walking bridge. The railway bridge has steel stringers and an extensive support pile infrastructure. The bridge has a 46 m span and is built up several metres above the bed of the Doghide River.

The next river crossing downstream is the 105th Avenue Bridge. The bridge is a single 6.1 m span wooden structure with a 8.8 m long roadway. The bridge has minimal freeboard under low flow conditions and, as a result, it is relatively flood prone. The road serves primarily the golf course.

The Old Highway No. 35 bridge is located approximately 0.5 km north of Tisdale. The bridge has a span of 20.4 m and a road width of approximately 7 m. The structure is a compressed arch reinforced concrete design with a suspended deck. The construction date of the bridge was not determined. The bridge has no piers.

A grid road bridge is located approximately 1.1 km downstream of the Old Highway No. 35 Bridge. The bridge has an 18 m span and is constructed of timber. The bridge is supported by timber piles with stringers. The abutments have timber wingwalls, both upstream and downstream, aligned 45° to normal flow. At some point in the past, work had been done on the upstream side of the bridge, as evidenced by the abandoned timber piles lying in the channel. The piles appear to have been cut off at a low water level. Specific details of this work, however, could not be confirmed because of difficulties in obtaining plans for the bridge.

The new Highway No. 35 Bridge is the river crossing furthest downstream which lies within the study area. The bridge has a 30.5 m span with the deck supported in two locations by piers. A standard staff gauge is mounted on the northern pier. The gauge served as WSC discharge measuring station 05KB009.

3.3 Model Calibration

3.3.1 Flood of Record

The 1957 spring runoff is the flood of record for the Doghide River near Tisdale. The discharge, estimated at 116 m^3/s by PFRA (DNNR, 1965), occurred on April 24. Photograph 3 documents this event.

The 1957 runoff produced wide spread flooding throughout the Carrot River Basin. Flooding was the result of heavy winter snowfall and above normal April precipitation. The 1957 event was the highest in a series of floods which occurred since 1954. In all of these events, excessive precipitation was the primary cause. However, progressive drainage improvements in the preceding years also contributed to the 1957 peak (DNNR, 1965).

Few model calibration data exist for the 1957 event with the exception of Photograph 3 which is included in this report. Difficulties in establishing a geodetic tie-in of the bridge, which was dismantled in 1972, limited the use of the picture in confirming the accuracy of the model. Energy loss coefficients were consequently estimated and a water surface profile produced for the 1957 event.

The abutments of the old bridge shown in Photograph 3 still exist allowing a very rough estimate of the 1957 water surface elevation at this location at 448.5 m. This compares favorably to the elevation of 448.2 m which was simulated for the 1957 event under existing (more streamlined) conditions.

3.3.2 Observed Water Levels

Saskatchewan Environment provided water surface elevations and discharges for the 1979 spring event. This data forms the basis for model calibration. By calibrating the relevant flow coefficients two profiles were recreated as shown in Tables 3.1 and 3.2.

3.4 Design Flood Models

Under the terms of the contract, SAEL was requested to produce water surface profiles for the following return period events: 1:10, 1:50, 1:100, and 1:500 under existing and floodway conditions. The corresponding design discharges determined by PFRA are 70.1, 108, 125, and 167 m^3/s, respectively. A brief discussion of model application follows.

Table 3.1 Water Surface Profile and Loss Coefficients for Calibration Model
(Discharge = 36.7 m^3/s - April 28, 1979)

Station	Location	Water Surface Elevation		Form Losses		Manning's Roughness		
		Observed (m)	Simulated (m)	Expansion	Contraction	Left Bank	Channel	Right Bank
1960			435.2	0.1	0.3	0.110	0.055	0.110
3000			436.6	0.1	0.3	0.110	0.055	0.110
3880			437.5	0.1	0.3	0.110	0.055	0.110
4400			438.2	0.1	0.3	0.110	0.055	0.110
4478	D/S Highway 35 Bridge	438.2	438.3	0.7	0.9	0.110	0.070	0.110
4494	U/S Highway 35 Bridge	438.5	438.5	0.7	0.9	0.110	0.070	0.110
4628			438.6	0.5	0.7	0.070	0.070	0.070
4638			438.7	0.5	0.7	0.070	0.070	0.070
4686	D/S Grid Road Bridge		439.2	0.7	0.9	0.070	0.075	0.070
4700	U/S Grid Road Bridge		440.2	0.7	0.9	0.070	0.075	0.070
4800			440.3	0.1	0.3	0.110	0.070	0.110
5170			440.3	0.3	0.5	0.110	0.070	0.110
5500			440.4	0.5	0.7	0.110	0.070	0.110
5712	D/S Old Highway 35 Bridge	440.7	440.6	0.5	0.7	0.110	0.070	0.110
5726	U/S Old Highway 35 Bridge	440.7	440.7	0.5	0.7	0.110	0.070	0.110
6136			441.7	0.3	0.5	0.110	0.065	0.110
6656			442.5	0.3	0.5	0.110	0.065	0.110
7480	Alley - 109th Avenue		443.3	0.3	0.5	0.110	0.065	0.110
8224			444.2	0.1	0.3	0.110	0.065	0.110
8472	D/S 105th Avenue Bridge	444.6	444.6	0.3	0.5	0.073	0.065	0.073
8484	U/S 105th Avenue Bridge	444.9	444.8	0.3	0.5	0.073	0.065	0.073
8622			445.0	0.5	0.7	0.150	0.073	0.110
8922	RCMP Station 103rd Avenue		445.2	0.5	0.7	0.150	0.073	0.110
9198			445.6	0.5	0.7	0.150	0.073	0.110
9316	D/S CNR Bridge	445.9	445.9	0.5	0.7	0.150	0.075	0.110
9324	U/S CNR Bridge	446.0	446.0	0.5	0.7	0.150	0.075	0.110
9520			446.2	0.1	0.3	0.150	0.075	0.150
9998			446.8	0.1	0.3	0.150	0.075	0.150
10198	D/S Walking Bridge		446.9	0.1	0.3	0.150	0.075	0.150
10204	U/S Walking Bridge		446.9	0.1	0.3	0.150	0.075	0.150
10493			447.0	0.1	0.3	0.110	0.070	0.150
10707			447.0	0.1	0.3	0.110	0.070	0.110
10761	D/S Highway 3 Bridge	447.1	447.1	0.3	0.5	0.070	0.070	0.070
10778	U/S Highway 3 Bridge	447.1	447.2	0.3	0.5	0.070	0.070	0.070
11084			447.2	0.3	0.5	0.070	0.070	0.070
14086			448.8	0.1	0.3	0.110	0.070	0.110
15286			449.7	0.1	0.3	0.110	0.070	0.110

Table 3.2 Water Surface Profile and Loss Coefficients for Calibration Model
(Discharge = 22.2m^3/s - April 30, 1979)

Station	Location	Water Surface Elevation		Form Losses		Manning's Roughness		
		Observed (m)	Simulated (m)	Expansion	Contraction	Left Bank	Channel	Right Bank
1960			434.6	0.5	0.7	0.110	0.060	0.110
3000			436.1	0.3	0.5	0.110	0.060	0.110
3880			437.1	0.3	0.5	0.110	0.060	0.110
4400			437.9	0.3	0.5	0.110	0.060	0.110
4478	D/S Highway 35 Bridge	437.9	438.0	0.7	0.9	0.110	0.060	0.110
4494	U/S Highway 35 Bridge	438.3	438.3	0.7	0.9	0.110	0.060	0.110
4628			438.5	0.5	0.7	0.070	0.077	0.070
4638			438.5	0.5	0.7	0.070	0.077	0.070
4686	D/S Grid Road Bridge		438.8	0.5	0.7	0.070	0.077	0.070
4700	U/S Grid Road Bridge		439.9	0.5	0.7	0.070	0.077	0.070
4800			440.0	0.1	0.3	0.110	0.077	0.110
5170			440.0	0.1	0.3	0.110	0.077	0.110
5500			440.1	0.5	0.7	0.110	0.077	0.110
5712	D/S Old Highway 35 Bridge	440.3	440.3	0.5	0.7	0.110	0.077	0.110
5726	U/S Old Highway 35 Bridge	440.3	440.3	0.5	0.7	0.110	0.077	0.110
6136			441.3	0.3	0.5	0.110	0.077	0.110
6656			442.2	0.5	0.7	0.110	0.077	0.110
7480	Alley - 109th Avenue		443.1	0.5	0.7	0.110	0.077	0.110
8224			444.0	0.3	0.5	0.110	0.077	0.110
8472	D/S 105th Avenue Bridge	444.4	444.4	0.5	0.7	0.073	0.080	0.073
8484	U/S 105th Avenue Bridge	444.6	444.6	0.5	0.7	0.073	0.080	0.073
8622			444.7	0.5	0.7	0.150	0.080	0.110
8922	RCMP Station 103rd Avenue		445.0	0.5	0.7	0.150	0.080	0.110
9198			445.3	0.5	0.7	0.150	0.080	0.110
9316	D/S CNR Bridge	445.5	445.5	0.5	0.7	0.150	0.083	0.110
9324	U/S CNR Bridge	445.6	445.6	0.5	0.7	0.150	0.083	0.110
9520			445.8	0.3	0.5	0.150	0.083	0.150
9998			446.4	0.5	0.7	0.150	0.083	0.150
10198	D/S Walking Bridge	446.5	446.5	0.3	0.5	0.150	0.083	0.150
10204	U/S Walking Bridge	446.5	446.5	0.3	0.5	0.150	0.083	0.150
10493			446.5	0.1	0.3	0.110	0.077	0.110
10707			446.6	0.1	0.3	0.110	0.077	0.110
10761	D/S Highway 3 Bridge	446.7	446.7	0.3	0.5	0.070	0.077	0.070
10778	U/S Highway 3 Bridge	446.7	446.7	0.3	0.5	0.070	0.077	0.070
11084			446.8	0.3	0.5	0.070	0.077	0.070
14086			448.8	0.1	0.3	0.110	0.077	0.110
15286			449.5	0.1	0.3	0.110	0.077	0.110

3.4.1 Starting Water Elevations

During steady state uniform flow, the relationship between stage and discharge is controlled by the channel. Under this flow condition the water surface profile will remain at normal depth. However, if an obstruction or an alteration in the physical geometry of the channel occurs, the water surface profile will be affected and a transition in flow regime will result upstream of the physical change. The HEC-2 computer program provides the option of starting the first section of a model at normal depth. In reality, a change in the physical geometry or channel roughness downstream of the first model cross section may result in a starting water surface elevation at the beginning of the study area which is not at normal depth. It is therefore necessary to examine the channel downstream of the study area.

During the field survey the channel downstream of the study area was inspected to determine whether the physical geometry of the channel remained relatively constant for some distance downstream of the study area. A cross-section located approximately 1.5 km downstream of the study area was taken. The purpose of gathering this information was to confirm that a normal flow regime would be maintained within the study area. As part of this exercise, various transitional profiles (M-1, M-2) were modelled by imposing various starting water surface elevations, above and below normal depth, at the most downstream section, for each of the design events modelled.

The results indicate that convergence to normal depth occurs at the beginning of the study area for a range of water surface elevations deviating from +1.5 m to -1.0 from normal depth at the starting cross section 1.5 km downstream of the study area. Therefore, it may be stated with relative confidence that under existing channel conditions, a normal depth regime occurs at the beginning of the study area.

3.4.2 Estimation of Form and Roughness Losses

Form losses which are due to transition in the shape of the channel are categorized as expansion and contraction losses. These energy losses were determined in accordance with the procedures outlined in U.S. Army Corps of Engineers HEC-2 Users Manual. It is important to note that as discharge and stage change, it may be necessary to adjust both the form and roughness coefficients.

After initial estimates of form losses were made, roughness losses in the form of Manning's "n" were adjusted to reproduce observed water levels. The estimation of the roughness loss coefficients is less easily determined because water surface elevations are more sensitive to variations in Manning's "n". Further uncertainties stem from the fact that the largest calibration flow of 54 m^3/s, which represents a return period less than the 1:10 event, was the basis of predicting roughness estimates for the 1:500 year return period event discharge of 167 m^3/s.

Investigations by Nikuradse in 1933 determined that relative roughness is a function of depth (i.e. (n) varies inversely as water depth increased as shown in Equation 1.)

Equation 1: $$n = \text{Constant} * \left(\frac{\text{Physical Roughness}}{\text{Water Depth}}\right)^{\text{Power}}$$

Using the above relationship, Manning's "n" from calibration models was determined for various reaches, as summarized in Tables 3.1 and 3.2. The sensitivity of changes in "n" were then investigated.

A series of runs for the calibration and design discharges were executed to establish a relationship between discharge and manning's "n". An average water depth was calculated for each discharge. The inverse of discharge versus "n channel" and depth versus "n channel" were straight line plotted on log-normal paper for all calibration runs. Valves of "n" were then estimated for design event discharges. The following factors were applied to the 1:10 (0.727), 1:50 (0.664), 1:100 (0.655), 1:500 (0.618) and historic (0.665) flood events, and the models re-executed. Differences in excess of 0.25 m for the 1:500 discharge were discovered.

In light of the lack of high flow calibration data and the expected impact of reduced water surface profiles for increased discharges, the aforementioned factors were applied to the design event models.

Water surface profiles produced using estimates of "n" by the above discussed method were then checked by producing a log-log plot of water depth versus discharge. Information from observed data was taken from stage discharge information provided by Saskatchewan Environment and was used to produce the rating curves in Figures 3 and 4. The result of the exercise was that water levels predicted by the log-log plot for both Highways 3 and 35 using observed data were comparable to those simulated by the HEC-2 model. Both observed and simulated rating curves are shown on Figures 3 and 4 for comparison.

STAGE DISCHARGE RELATIONSHIP

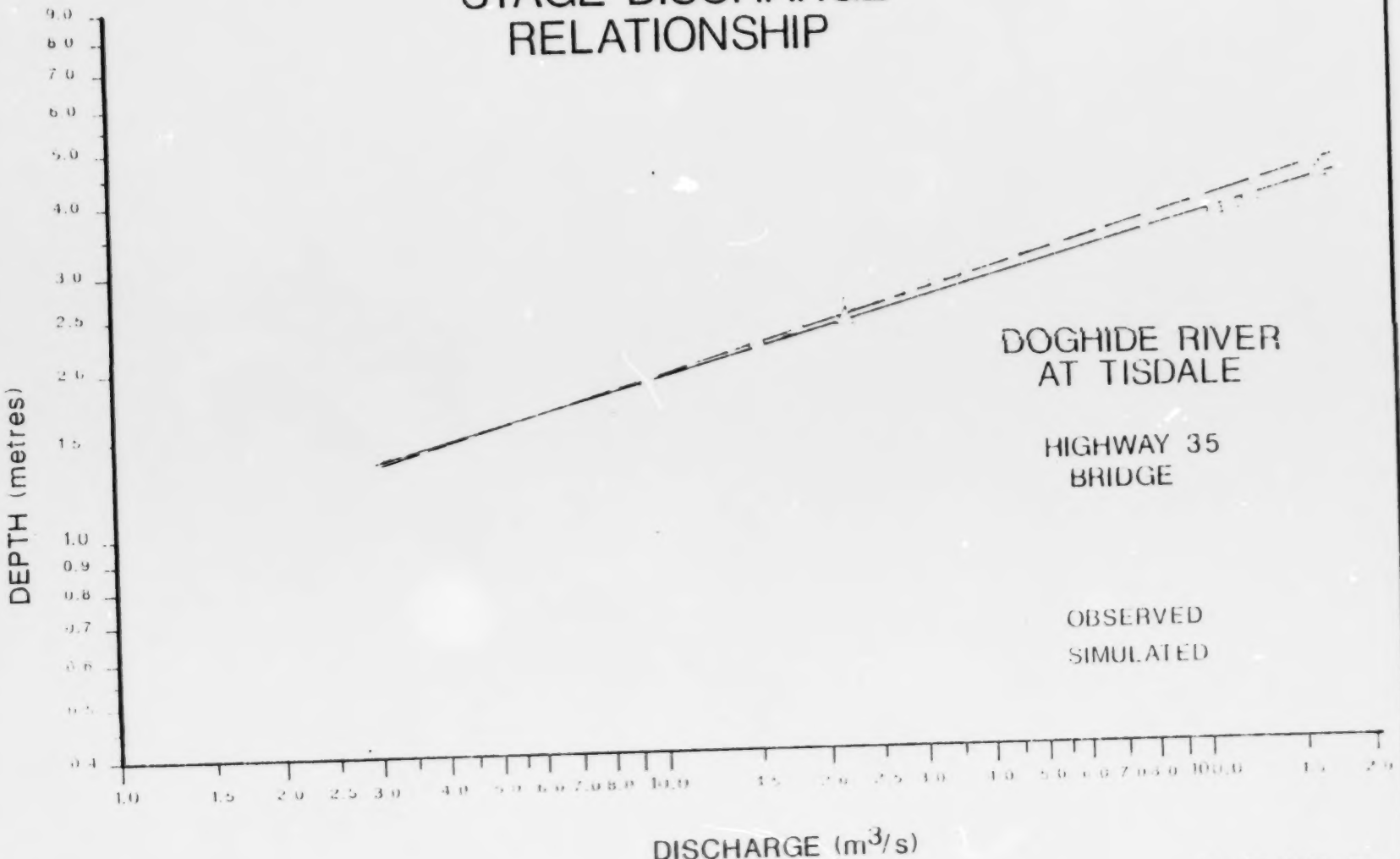

FIGURE 3

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STAGE DISCHARGE RELATIONSHIP

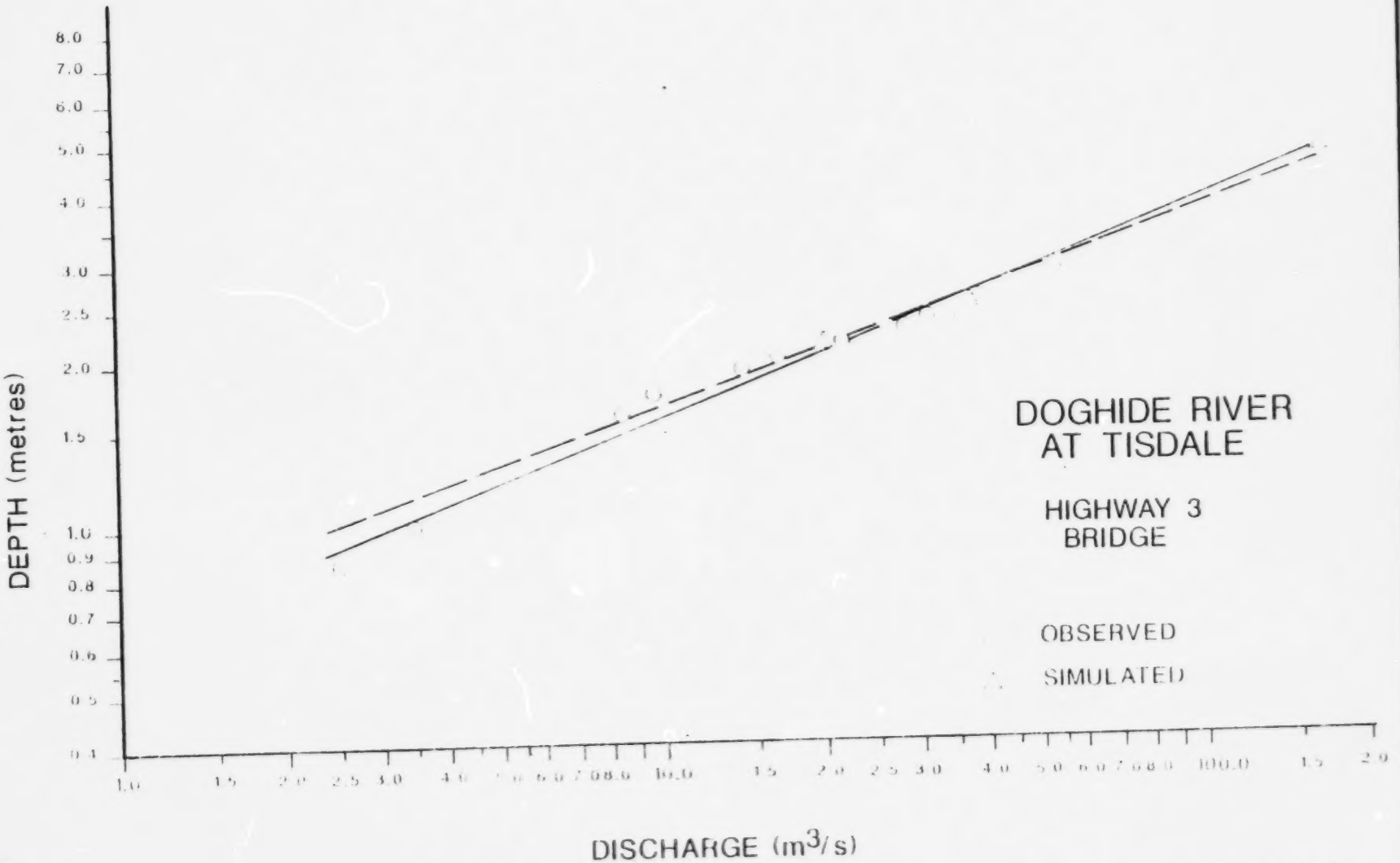

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FIGURE 4

3.4.3 Determination of Floodway and Fringe Areas

As introduced in Section 1.1, there are three criteria which aid in the delineation of the floodway and floodway fringe in the flood hazard area; the 1 metre depth line, the 1 m/s iso-velocity line and the 0.30 m encroachment rise line. The floodway line is usually located at the position of the criteria line which is furthest from the channel. This represents the location where all three of the criteria are satisfied. There have been, however, slight deviations from this criteria for reasons of practicality. The boundaries are streamlined with irregularities removed. Areas at the bridges and roadways are delineated to remain consistent with areas immediately upstream and downstream.

The Doghide River is incised in a flat valley floodplain. Once the river banks are overtopped the floodplain often extends to the valley walls. The result is that the governing criteria is usually the 1 metre depth contour, although in a few instances the 1 m/s iso-velocity contour determines the location of the floodway boundary.

Water surface elevations for the 1:500 floodway were finally determined using encroachment option 9 of the HEC-2 model. Because of the limited encroachment permitted under the criteria above discussed, the difference between water surface elevations under floodway and existing conditions for the 1:500 discharge is negligible, as shown in Table 3.3.

3.4.4 Effects of Ice Conditions

Although there has been no evidence of ice problems in the study area to date, a discussion of the effects of ice conditions is provided in this section.

There are seven river crossings in the study area. Five of the seven bridges have pier supports. A reduction in flow area caused by ice or debris would result in higher water surface elevations upstream. During the model calibration stage of this study it was assumed that all the bridges with pier support structures are susceptible to ice and debris collection. The impacts on water levels would be severest at the 105th Avenue and CPR Bridges. Water surface elevations produced by the model widely vary under different assumptions of reduced flow area at these locations.

Anchor ice formation may also affect water levels. Ice may bottom freeze to rock outcrops, which spot the channel bottom and become unmoveable during peak flows. However, the main channel of the Doghide River represents a relatively small portion of the total flow area utilized during flood peaks. The bankfull capacity of the main channel is less than the 1:2 year discharge. Eliminating this flow area during the 1:500 event discharge results in insignificant increases in water surface elevations.

The third ice impact considered was the possibility that a consolidated ice cover may form in the channel during the winter flow conditions and that flood flows may later pass through the channel while the cover is in place. The ice cover would then degrade, and form an ice floe. The ice floe then jams at locations where a constriction in the channel exists, such as the bridges. The result is greatly increased upstream water levels.

The study area lies in the headwaters of a well developed watershed. Flood peaks are flashy during spring runoff. The cover naturally degrades and ice floes form at discharges less than the 1:500 event. This phenomenon is referred to as ice run. Previous investigations (Environment Canada, 1983) have shown the ice run to occur at approximately the 1:80 event. The hydraulic impact of an ice cover on the 1:500 design event is negligible, although low return period discharges coupled with ice jamming may produce water surface elevations which exceed the 1:500 "open water" discharge. The possibility of this occurring is, however, remote.

3.5 Results and Discussion

Two model sets were developed to simulate water surface profiles for the Doghide River through Tisdale. The first model, as described in Section 3.3, served to define calibration coefficients by reproducing observed water surface elevations. Estimates of calibration coefficients for Manning's "n", expansion and contraction (form) losses and bridge losses were estimated. The calibration model was limited in that the flow used was less than the 1:10 design flood event. It therefore became necessary to adjust the hydraulic coefficients for the higher design flood events.

Manning's "n" for design models (second set of models) was estimated using a

relationship which states that as flow depth increases, the effective roughness of an object becomes less (Nikuradse, 1933). Log-log plots of Manning's "n" versus flow depth and river stage versus discharge for observed water surface elevations were used to determine values of Manning's "n" for design flood events and to check the accuracy of calibrated versus simulated water surface profiles.

The 1:500 event model from the above mentioned design models was then used to define floodway conditions as discussed in Section 1.1. The 1 m depth line was determined by plotting the simulated 1:500 water surface profile on the 1:2000 scale topographic maps provided, and determining the location of the 1 m depth. The 1 m/s iso-velocity line was estimated by the HEC-2 model by requesting a detailed flow distribution at each of the modelled cross sections. The 0.30 m rise line due to encroachment was determined using Encroachment Option 9 of the HEC-2 model. Selecting from one of the three criteria lines determined as described above, the least severe encroachment was used to determine the floodway conditions model. The results of the design event and floodway models are shown in Table 3.3. The flood of record is also provided for comparison purposes.

The Doghide River is incised in a flat valley floodplain. The criteria which dictated the floodway - floodway fringe boundary was the 1 m depth line. Because the 1 m depth line was usually close to the steep valley walls, the reduction in flow area, when considering the encroached scenario, was small. The result was negligible difference in water surface profiles when comparing the encroached and unencroached 1:500 event profiles.

Table 3.3 **Simulated Water Surface Elevations for Flood of Record and Design Event Models**

Station	Description/Location	Water Surface Elevation (metres)					
		Flood of Record	1:10	1:50	1:100	1:500	1:500 W/Floodway
1960		436.2	435.7	436.1	436.3	436.6	436.8
3000		437.3	436.9	437.3	437.4	437.7	437.7
3830		438.2	437.8	438.2	438.3	438.5	438.6
4400		438.9	438.5	438.8	438.9	439.2	439.2
4478	D/S Highway 35 Bridge	439.2	438.7	439.1	439.3	439.7	439.7
4494	U/S Highway 35 Bridge	439.2	438.7	439.1	439.3	439.8	439.8
4628		439.5	438.9	439.4	439.6	440.1	440.1
4638		439.6	439.1	439.5	439.7	440.1	440.2
4686	D/S Grid Road Bridge	439.8	439.3	439.7	440.0	440.4	440.4
4700	U/S Grid Road Bridge	439.9	439.3	439.8	440.0	440.4	440.4
4800		440.1	439.4	440.0	440.1	440.5	440.5
5170		440.2	439.6	440.1	440.3	440.7	440.7
5300		440.8	440.2	440.7	440.9	441.4	441.4
5712	D/S Old Highway 35 Bridge	441.6	440.9	441.5	441.8	442.3	442.3
5726	U/S Old Highway 35 Bridge	441.8	441.0	441.6	441.9	442.5	442.5
6136		442.7	442.1	442.6	442.8	443.4	443.4
6636		443.4	442.9	443.3	443.5	443.9	443.9
7480	Alley - 109th Avenue	444.2	443.7	444.1	444.3	444.6	444.6
8224		445.0	444.5	444.9	445.0	445.3	445.3
8472	D/S 105th Avenue Bridge	445.5	445.2	445.4	445.5	445.8	445.8
8484	U/S 105th Avenue Bridge	445.5	445.2	445.4	445.5	445.8	445.8
8622		445.6	445.4	445.6	445.7	445.9	445.9
8922	RCMP Station 103rd Avenue	445.9	445.6	445.8	445.9	446.2	446.2
9198		446.4	446.0	446.3	446.4	446.7	446.7
9316	D/S CNR Bridge	446.7	446.2	446.6	446.8	447.1	447.1
9324	U/S CNR Bridge	446.8	446.3	446.7	446.9	447.3	447.3
9520		447.1	446.5	447.0	447.2	447.6	447.6
9998		447.8	447.2	447.7	447.9	448.3	448.3
10198	D/S Walking Bridge	448.0	447.4	447.9	448.1	448.5	448.5
10204	U/S Walking Bridge	448.1	447.4	448.0	448.2	448.5	448.5
10493		448.2	447.4	448.0	448.3	448.6	448.6
10707		448.2	447.5	448.1	448.3	448.6	448.6
10761	D/S Highway 3 Bridge	448.3	447.6	448.2	448.4	448.8	448.8
10778	U/S Highway 3 Bridge	448.3	447.6	448.2	448.5	448.9	448.9
11084		448.4	447.7	448.3	448.6	449.0	449.0
14086		449.3	449.0	449.2	449.3	449.6	449.6
15286		450.4	450.0	450.3	450.4	450.6	450.6

4.0 CONCLUSIONS

All model runs were completed with the U.S Army Corps of Engineers HEC-2 computer program. The portable computer version was used for this study. Data files are stored on IBM-XT compatible floppy diskette. In addition, a bound copy of all pertinent computer runs was produced.

Model calibration as shown in Tables 3.1 and 3.2 proved successful. It was, however not possible to reproduce a few observed water levels within the 0.1 m tolerance specified in the Terms of Reference. This may be due to inaccuracies in the observed values or in the derived model parameters. In any event, the discrepancies are deemed not significant enough to adversely effect delineation of the flood hazard area.

As required under the Terms of Reference, water surface profiles for the following events were determined: flood of record (1957), 1:10, 1:50, 1:100 and 1:500 under existing and floodway conditions. The water surface elevations are summarized in Table 3.3. Water surface profiles are included in Appendix C.

Two sets of flood hazard mapping have been produced. The first set illustrates the flood frequency lines described above. The second set of mapping illustrates the floodway criteria lines discussed in Sections 1.1 and 3.5. Also shown on the floodway criteria maps is the 1:500 flood event under floodway conditions.

REFERENCES

Department of Northern Affairs and National Resources, Water Resources Branch, "Flood of 1957 in the Carrot River Basin", Water Resources Paper No. 121F, 1965.

Environment Canada, IWD, "Floods of 1972 and 1974 in the Carrot River Basin", December 1977.

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Nikuradse J., "Stromungsgesetze in ravhen Rohren", Ver. Dtsch. Ing. Forschungsh., vol. 361, 1933.

Prairie Farm Rehabilitation Administration, "Town of Tisdale Hydrologic Report, Canada - Saskatchewan Flood Damage Reduction Program", November, 1982.

U.S. Army Corps of Engineers, "HEC-2 Water Surface Profiles - Users Manual" Computer Program No. 723-X6-L202A, September, 1982.

Ward R., "Floods, a Geographical Perspective", MacMillan, 1978.

APPENDIX A

Study Area

APPENDIX B

Computer Runs for Calibration and
Design Flood Models

List of Models

- Calibration Model for April 30, 1979 Event
- Calibration Model for April 28, 1979 Event
- Design Events (Multiple Profile) Model
- 1:500 Flood Hazard Area (Encroachment) Model

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**********************************************
* WATER SURFACE PROFILES                     *
* VERSION OF NOVEMBER 1976                   *
* UPDATED MAY 1984                           *
* IBM-PC-XT VERSION AUGUST 1985              *
* RUN DATE  11-30-88   TIME  20:36:34          *
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**************************************
* U.S. ARMY CORPS OF ENGINEERS       *
* THE HYDROLOGIC ENGINEERING CENTER  *
* 609 SECOND STREET, SUITE D         *
* DAVIS, CALIFORNIA 95616            *
  * (916) 440-2105 (FTS) 448-2105
**************************************
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X    X  XXXXXXX   XXXXX            XXXXX
X    X  X        X     X          X     X
X    X  X        X                      X
XXXXXXX  XXXX    X         XXXXX    XXXXX
X    X  X        X                  X
X    X  X        X     X            X
X    X  XXXXXXX   XXXXX             XXXXXXX
```

THIS RUN EXECUTED 11-30-88

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**************************************************
 HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
 ERROR CORR -  01,02,03,04,05,06
 MODIFICATION -  50,51,52,53,54,55,56
 IBM-PC-XT VERSION AUGUST 1985
**************************************************

C
T1      TISDALE HYDRAULICS STUDY
T2      DOGNIDE RIVER AT TISDALE - APR 28,1979
T3      ALT. BRIDGE SIM. TECHNIQUE

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0.        0.        0.        0.   .001070      1.00       1.0       37.   435.100      .000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

    -1.000      .000    -1.000      .000      .000    -1.000    -1.000      .000      .000      .000

J3  VARIABLE CODES FOR SUMMARY PRINTOUT

    38.000    3.000     1.000     2.000    16.000    17.000    18.000    13.000    14.000    15.000


     .000   38.000    43.000    46.000    47.000    53.000    54.000     8.000    21.000    22.000

J5  LPRNT     NUMSEC                        ********REQUESTED SECTION NUMBERS********

   -10.000  -10.000      .000      .000      .000      .000      .000      .000      .000      .000

NC      .110      .110      .055      .100      .300      .000      .000      .000      .000      .000
          CROSS SECTION 1-C , 1.1 km. DOWNSTREAM OF THE STUDY AREA
X1  1960.000    20.000    44.100    55.400      .000      .000      .000      .000      .000      .000
GR   438.000      .000   435.120    10.000   434.970    20.000   435.040    30.000   434.970    40.000
GR   433.800    44.100   432.090    46.300   432.130    48.600   431.900    51.500   432.200    53.500
GR   432.780    54.200   433.610    55.400   434.400    58.900   435.060    60.900   435.310    69.300
GR   435.200    79.300   435.090    89.300   435.170    99.300   435.190   109.300   438.000   299.990

NC      .110      .110      .055      .100      .300      .000      .000      .000      .000      .000
          SECTION 1-B , MOST D/S X-SECTION IN STUDY AREA
X1  3000.000    64.000   523.500   531.400  1040.000  1040.000  1040.000      .000      .000      .000
X3    10.000      .000      .000      .000      .000   537.000   436.500      .000      .000      .000
GR   444.900      .000   444.500     7.000   444.000     9.000   443.500    11.000   443.500    21.500
GR   443.500    42.000   443.000   104.000   442.500   146.000   442.000   178.000   442.000   197.000
GR   442.000   270.000   441.500   305.000   441.000   314.000   440.500   318.000   440.000   322.000
GR   439.500   323.500   439.000   325.000   438.500   327.000   438.000   332.000   437.500   333.500
GR   437.000   336.000   436.500   338.000   436.500   372.500   436.500   402.000   436.500   421.500
GR   436.500   425.500   436.500   428.500   436.500   433.500   436.500   438.000   436.500   466.000
GR   436.500   488.000   435.950   500.000   435.900   501.900   436.210   511.700   436.300   517.700
GR   435.410   521.500   434.430   523.500   433.610   525.900   433.260   528.200   433.400   529.500
GR   434.210   530.600   434.910   531.400   435.450   533.200   435.650   537.000   436.000   558.000
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GR	436.000	585.000	436.500	590.500	437.500	595.000	438.000	597.000	438.500	600.000

GR	439.000	602.000	439.500	606.000	440.000	610.000	440.500	613.000	441.000	617.000
GR	441.500	624.000	442.000	671.000	442.000	710.000	441.500	730.000	441.000	757.000
GR	441.000	800.000	441.500	851.000	442.000	866.000	442.500	883.000	.000	.000
NC	.110	.110	.055	.100	.300	.000	.000	.000	.000	.000
	SECTION 1-A , 600 m. D/S HIGHWAY 35 BRIDGE									
X1	3880.000	74.000	325.400	331.600	850.000	778.000	880.000	.000	.000	.000
X3	10.000	.000	.000	121.000	444.000	429.000	438.000	.000	.000	.000
GR	443.700	.000	443.500	6.500	443.000	9.000	442.500	11.500	442.000	15.800
GR	442.000	22.500	442.500	24.000	443.000	26.000	443.500	27.000	440.000	29.000
GR	440.000	72.500	440.000	97.000	444.000	121.000	443.500	212.000	443.000	225.000
GR	442.500	232.500	442.000	234.000	441.500	237.500	441.000	241.000	440.500	244.100
GR	440.000	247.500	439.500	250.000	439.000	251.500	438.500	254.000	438.000	255.000
GR	437.500	256.800	437.000	258.000	437.000	263.000	437.000	271.000	437.000	276.000
GR	437.280	304.000	436.760	312.700	436.430	323.700	435.300	324.600	434.410	325.400
GR	434.100	326.200	434.350	327.600	434.540	329.400	434.860	331.600	435.870	334.600
GR	436.310	336.600	437.030	346.100	436.500	350.500	436.500	354.000	436.500	357.000
GR	436.500	359.000	436.500	362.500	436.500	364.800	437.000	366.000	437.000	401.500
GR	437.000	420.600	437.000	423.000	437.000	429.000	437.000	431.000	437.000	435.500
GR	437.000	438.000	437.000	439.000	437.000	440.000	437.000	461.000	437.000	470.000
GR	437.000	475.500	437.500	478.000	438.000	481.000	438.500	483.800	439.000	487.000
GR	439.500	489.500	440.000	495.500	440.500	502.000	441.000	591.000	441.500	645.500
GR	442.000	684.500	442.500	713.000	443.000	759.000	443.200	823.500	.000	.000
NC	.110	.110	.055	.100	.300	.000	.000	.000	.000	.000
	SECTION 1 , 78 m. D/S HIGHWAY 35 BRIDGE									
X1	4400.000	33.000	35.300	45.700	504.000	368.000	520.000	.000	.000	.000
X3	10.000	.000	.000	35.300	440.200	.000	.000	.000	.000	.000
GR	440.200	.000	440.000	5.500	439.500	9.500	439.000	10.500	438.500	12.000
GR	437.880	20.000	437.450	26.600	436.620	35.300	436.390	38.200	435.450	41.900
GR	436.310	45.700	436.930	48.400	438.000	49.600	438.000	77.500	438.000	118.000
GR	438.000	142.500	438.000	153.500	438.000	164.000	438.000	187.000	438.000	258.000
GR	438.000	266.000	438.500	270.500	439.000	275.000	439.500	279.000	440.000	286.000
GR	440.500	292.500	441.000	300.500	441.500	314.000	442.000	330.000	442.500	351.000
GR	443.000	369.000	443.500	392.000	443.500	435.000	.000	.000	.000	.000
NC	.070	.070	.055	.100	.300	.000	.000	.000	.000	.000
	SYNTHETIC X-SEC (E1) LOCATED 10 m. D/S HIGHWAY 35 BRIDGE									
X1	4468.000	30.000	278.000	294.000	36.000	94.000	68.000	.000	.000	.000
GR	442.640	.000	442.500	4.000	442.500	83.000	440.000	90.000	439.000	100.000
GR	438.500	110.000	438.000	144.000	437.500	190.000	437.500	215.000	438.000	228.000
GR	438.000	277.000	437.500	278.000	437.000	279.500	436.000	281.500	435.000	282.500
GR	435.500	286.000	436.000	288.000	436.500	290.000	437.000	292.000	437.500	294.000
GR	438.000	378.000	438.500	436.000	439.000	442.000	439.500	446.000	440.000	452.000
GR	440.500	460.000	441.000	478.000	441.500	502.000	442.000	545.000	442.500	582.000
NC	.110	.110	.070	.700	.900	.000	.000	.000	.000	.000
	SECTION 2A , IMMED D/S HIGHWAY 35 BRIDGE									
X1	4478.000	27.000	1.200	31.400	10.000	10.000	10.000	.000	.000	.000
X3	10.000	435.300	.000	5.100	439.950	19.700	439.940	.000	.000	.000
GR	439.950	.000	439.950	.800	439.950	1.200	437.560	1.300	436.000	5.100
GR	436.120	7.000	435.400	10.000	435.220	12.600	435.230	15.100	439.450	15.110
GR	439.450	15.400	435.230	15.410	435.370	16.600	435.850	18.400	436.600	19.700
GR	437.820	24.400	439.450	24.410	439.450	24.700	437.820	24.710	438.300	29.900

GR	438.650	31.300	439.930	31.400	439.930	32.400	439.930	32.900	439.930	34.600
GR	439.930	36.900	442.000	216.000	.000	.000	.000	.000	.000	.000
	SECTION 2B , IMMED U/S HIGHWAY 35 BRIDGE									
X1	4494.000	.000	.000	.000	16.000	16.000	16.000	.000	.000	.000
X3	10.000	435.400	.000	10.000	439.950	17.500	439.940	.000	.000	.000
BT	27.000	.000	439.950	439.950	.800	439.950	439.950	1.200	439.950	439.950
BT	1.300	439.950	439.460	5.100	439.950	439.460	7.000	439.950	439.950	10.000
BT	439.950	439.460	12.600	439.940	439.450	15.100	439.940	439.450	15.110	439.940
BT	439.450	15.400	439.940	439.450	15.410	439.940	439.450	16.600	439.940	439.450
BT	18.400	439.940	439.450	19.700	439.940	439.450	24.400	439.940	439.450	24.410
BT	439.940	439.450	24.700	439.940	439.450	24.710	439.940	439.450	29.900	439.930
BT	439.440	31.300	439.930	439.440	31.400	439.930	439.930	32.400	439.930	439.930
BT	32.900	439.930	439.930	34.600	439.930	439.930	36.900	439.930	439.930	216.000
BT	442.000	442.000	.000	.000	.000	.000	.000	.000	.000	.000
NC	.070	.070	.070	.500	.700	.000	.000	.000	.000	.000
	SYNTHETIC X-SEC (E2) LOCATED 10 m. U/S HIGHWAY 35 BRIDGE									
X1	4504.000	16.000	113.000	125.000	10.000	10.000	10.000	.000	.000	.000
GR	440.000	.000	439.500	1.000	439.000	2.000	438.500	4.500	438.000	10.000
GR	438.000	110.000	437.500	113.000	437.000	114.000	436.000	116.000	435.000	118.000
GR	435.000	120.000	437.500	125.000	438.000	135.000	438.500	138.000	439.000	196.000
GR	439.900	200.000	.000	.000	.000	.000	.000	.000	.000	.000
NC	.070	.070	.070	.500	.700	.000	.000	.000	.000	.000
	SECTION 3A , 134 m. U/S HIGHWAY 35 BRIDGE									
X1	4628.000	50.000	125.500	134.600	134.000	108.000	124.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	223.000	440.000	.000	.000	.000
GR	444.000	.000	444.000	69.000	443.500	77.000	443.000	80.000	442.500	82.000
GR	442.000	85.500	441.500	92.000	441.000	100.000	440.500	102.000	440.000	104.000
GR	439.500	106.000	439.000	110.000	438.730	111.000	437.710	115.500	437.760	125.500
GR	435.900	126.900	435.970	129.500	436.070	131.900	436.480	134.600	437.670	144.600
GR	437.500	146.400	437.450	155.200	437.490	161.700	437.570	171.300	438.290	178.200
GR	439.000	211.500	439.500	214.000	440.000	223.000	439.500	230.000	439.000	233.000
GR	438.500	235.000	438.000	241.000	437.500	244.000	437.500	246.500	438.000	249.000
GR	438.500	251.500	438.500	255.500	438.000	278.000	438.000	308.000	438.500	314.000
GR	439.000	316.000	439.500	318.500	440.000	321.000	440.500	330.000	441.000	340.000
GR	441.500	358.000	442.000	415.500	442.500	451.000	443.000	469.000	443.500	481.000
NC	.070	.070	.070	.500	.700	.000	.000	.000	.000	.000
	SECTION 3B , 48 m. D/S GRID ROAD BRIDGE									
X1	4638.000	53.000	129.500	139.500	10.000	10.000	10.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	219.500	439.500	.000	.000	.000
GR	444.000	.000	444.000	25.000	443.500	45.000	443.000	53.000	443.500	61.000
GR	443.500	78.000	443.000	80.000	442.500	83.000	442.000	87.500	441.500	94.000
GR	441.000	110.500	440.500	114.500	440.000	115.500	439.500	117.000	439.000	118.000
GR	438.500	120.000	438.000	128.000	437.500	129.500	435.900	132.000	435.970	134.500
GR	436.070	135.500	436.480	136.500	437.500	139.500	438.000	141.000	438.500	143.500
GR	438.500	154.500	438.500	174.500	438.500	181.500	438.500	184.500	439.000	217.000
GR	439.500	219.500	439.500	236.500	439.000	238.000	438.500	240.500	438.000	247.000
GR	437.500	249.500	437.500	251.500	438.000	254.500	438.000	259.500	438.000	284.000
GR	438.000	296.500	438.000	309.000	438.500	314.000	439.000	317.000	439.500	320.000
GR	440.000	323.000	440.500	331.000	441.000	338.000	441.500	352.000	442.000	406.000
GR	442.500	449.500	443.000	468.000	443.500	481.000	.000	.000	.000	.000

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NC      .070      .070      .070      .500      .700      .000      .000      .000      .000      .000
        SYNTHETIC X-SEC (E3) LOCATED 10 m. D/S GRID ROAD BRIDGE
X1   4676.000    26.000   154.000   164.000    38.000    38.000    46.000      .000      .000      .000
GR    444.500      .000   444.000     7.000   443.500    24.000   443.000    48.000   442.500    70.000
GR    442.000    85.000   441.500    96.000   441.000   108.000   440.500   110.000   440.000   111.000
GR    439.500   111.500   439.000   114.000   438.000   146.000   437.500   150.000   435.000   154.000
GR    435.000   159.000   435.500   162.000   436.000   163.000   436.500   164.000   437.000   174.000
GR    437.000   205.000   437.500   214.000   437.500   240.000   438.000   242.000   438.500   244.000
GR    439.800   249.000      .000      .000      .000      .000      .000      .000      .000      .000

NC      .070      .070      .075      .700      .900      .000      .000      .000      .000      .000
        SECTION 4A , IMMED D/S GRID ROAD BRIDGE
X1   4686.000    24.000    78.900    96.700    10.000    10.000    10.000      .000      .000      .000
X3     10.000   436.600      .000    85.300   439.980    91.200   439.950      .000      .000      .000
GR    442.500      .000   440.000    73.300   439.980    78.900   437.150    79.000   437.360    81.400
GR    435.500    83.900   435.290    85.300   439.430    85.310   439.430    85.600   435.290    85.610
GR    435.300    87.200   435.460    88.800   436.560    91.200   439.400    91.210   439.400    91.500
GR    436.560    91.510   437.670    96.600   439.900    96.700   439.830   100.600   439.790   102.300
GR    439.740   105.400   439.680   110.500   440.000   260.500   442.500   344.500      .000      .000

        SECTION 4B , IMMED U/S GRID ROAD BRIDGE
X1   4700.000      .000      .000      .000    14.000    14.000    14.000      .000      .000      .000
X3     10.000   436.600      .000    85.300   439.980    91.200   439.950      .000      .000      .000
BT     24.000      .000   442.500   442.500    73.300   440.000   440.000    78.900   439.980   439.980
BT     79.000   439.980   439.430    81.400   439.980   439.430    83.900   439.980   439.330    85.300
BT    439.980   439.430    85.310   439.980   439.430    85.600   439.980   439.430    85.610   439.980
BT    439.430    87.200   439.980   439.430    88.800   439.970   439.420    91.200   439.950   439.400
BT     91.210   439.950   439.400    91.500   439.950   439.400    91.510   439.950   439.400    96.600
BT    439.900   439.350    96.700   439.900   439.900   100.600   439.830   439.830   102.300   439.790
BT    439.790   105.400   439.740   439.740   110.500   439.680   439.680   260.500   440.000   440.000
BT    344.500   442.500   442.500      .000      .000      .000      .000      .000      .000      .000

NC      .110      .110      .070      .500      .700      .000      .000      .000      .000      .000
        SYNTHETIC X-SEC (E4) LOCATED 40 m. U/S GRID ROAD BRIDGE
X1   4740.000    46.000   120.000   127.500    40.000    40.000    40.000      .000      .000      .000
X3     10.000      .000      .000      .000      .000   303.500   439.500      .000      .000      .000
GR    443.500      .000   443.000     3.000   442.500     4.500   442.000     5.500   441.500     7.500
GR    441.000     9.000   440.500    11.500   440.000    14.000   439.500    16.500   439.000    22.500
GR    438.500    38.500   438.500    59.500   438.500    95.000   438.500    96.000   438.500   101.500
GR    438.000   112.500   437.500   114.000   437.000   117.000   436.660   120.000   435.730   121.500
GR    435.180   123.500   436.500   127.500   437.000   129.000   437.500   129.500   438.000   134.000
GR    438.500   166.000   438.500   195.500   438.300   264.500   438.500   286.000   439.000   287.500
GR    439.500   290.000   439.500   303.500   439.000   307.500   438.500   309.000   438.000   319.000
GR    438.000   336.000   438.500   385.000   439.000   393.000   439.500   398.500   440.000   406.000
GR    440.500   413.500   441.000   421.500   441.500   428.500   442.000   439.500   442.500   454.500
GR    443.000   498.500      .000      .000      .000      .000      .000      .000      .000      .000

NC      .110      .110      .070      .100      .300      .000      .000      .000      .000      .000
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SECTION 4C , 100 m. U/S GRID ROAD BRIDGE

X1	4800.000	.000	.000	.000	60.000	60.000	60.000	.000	.000	.000
NC	.110	.110	.070	.300	.500	.000	.000	.000	.000	.000

SECTION 5 , 500 m. U/S GRID ROAD BRIDGE

X1	5170.000	57.000	245.100	260.000	364.000	356.000	370.000	.000	.000	.000
X3	10.000	.000	.000	108.000	443.000	.000	.000	.000	.000	.000
GR	444.200	.000	444.000	3.000	443.500	6.000	443.000	8.000	442.500	9.000
GR	442.000	10.000	441.500	12.500	441.000	15.500	440.500	25.000	440.500	38.000
GR	441.000	42.000	441.500	56.000	442.000	59.500	442.500	67.000	443.000	74.000
GR	443.000	108.000	442.500	114.000	442.000	116.000	441.500	117.000	441.000	118.000
GR	440.500	119.000	440.000	120.500	439.500	122.200	439.000	128.000	439.000	138.500
GR	439.000	155.000	439.000	164.500	439.000	175.500	439.000	181.000	439.000	204.000
GR	439.000	217.000	439.000	220.000	439.000	225.000	439.000	232.000	438.780	233.300
GR	438.660	241.300	437.930	245.100	436.660	249.100	435.730	252.600	435.180	257.800
GR	436.930	258.700	437.590	260.000	439.160	261.900	439.350	264.900	440.020	267.000
GR	440.030	268.500	441.000	271.000	441.500	279.000	442.000	296.000	442.500	307.500
GR	443.000	325.500	443.500	356.000	443.500	428.000	443.000	429.500	443.000	442.500
GR	443.500	444.500	443.780	452.000	.000	.000	.000	.000	.000	.000
NC	.110	.110	.070	.500	.700	.000	.000	.000	.000	.000

SECTION 6 , 220 m. D/S OLD HIGHWAY 35 BRIDGE

X1	5500.000	74.000	531.600	537.600	296.000	326.000	330.000	.000	.000	.000
X3	10.000	.000	.000	431.000	446.000	.000	.000	.000	.000	.000
GR	447.500	.000	447.500	76.000	447.000	91.000	446.500	131.000	446.000	162.000
GR	445.500	186.000	445.000	215.500	444.500	250.000	444.000	276.000	444.000	281.000
GR	444.000	288.000	443.500	291.000	443.000	304.500	442.500	313.500	442.000	314.500
GR	442.000	331.000	442.500	340.000	443.000	346.000	443.500	352.000	444.000	359.000
GR	444.500	362.500	445.000	370.000	445.000	376.000	444.500	377.500	444.500	381.000
GR	445.000	383.000	445.340	388.500	445.000	395.500	445.000	402.000	445.500	404.000
GR	446.000	408.000	446.000	431.000	445.500	451.000	445.000	457.000	444.500	462.000
GR	444.000	468.000	443.500	472.500	443.000	478.000	442.500	480.000	442.000	481.500
GR	441.500	487.000	441.000	490.500	440.500	499.000	440.600	508.000	439.370	518.000
GR	437.560	523.000	437.890	525.300	437.070	531.600	437.130	532.500	437.120	533.600
GR	437.530	535.500	438.160	536.400	439.570	537.600	439.610	540.000	439.380	549.500
GR	441.000	556.000	441.010	556.000	442.500	576.000	444.000	585.900	444.860	595.800
GR	445.100	598.000	446.000	634.500	446.500	655.800	447.000	675.000	447.000	774.000
GR	447.000	819.500	447.000	830.000	446.500	906.000	446.500	964.500	446.500	971.500
GR	446.500	989.000	447.000	992.000	447.500	994.000	447.500	1009.000	.000	.000
NC	.110	.110	.070	.500	.700	.000	.000	.000	.000	.000

SYNTHETIC X-SEC (E5) LOCATED 10 m. D/S HIGHWAY 35 BRIDGE

X1	5702.000	21.000	70.000	90.000	174.000	200.000	202.000	.000	.800	.000
GR	442.500	.000	442.000	16.000	441.500	18.000	441.000	22.000	440.500	26.000
GR	440.000	60.000	439.000	64.000	437.500	70.000	437.200	80.000	437.500	90.000
GR	439.000	92.000	440.000	94.000	440.500	95.000	441.000	108.000	441.500	118.000
GR	442.000	124.000	442.000	142.000	443.000	148.000	443.500	161.000	444.000	164.000
GR	445.000	230.000	.000	.000	.000	.000	.000	.000	.000	.000

NC	.110	.110	.070	.500	.700	.000	.000	.000	.000	.000
	SECTION 7A , IMMED D/S OLD HIGHWAY 35 BRIDGE									
X1	5712.000	16.000	11.200	27.500	10.000	10.000	10.000	.000	.000	.000
X3	10.000	.000	.000	11.300	442.410	22.200	442.390	.000	.000	.000
GR	442.580	.000	442.470	7.700	442.440	9.200	442.430	9.500	442.410	11.200
GR	439.050	11.300	438.170	13.900	437.990	15.500	437.970	19.100	438.330	20.400
GR	439.100	22.900	439.940	24.100	440.670	27.400	442.380	27.500	442.480	30.300
GR	442.650	38.000	.000	.000	.000	.000	.000	.000	.000	.000
	SECTION 7B , IMMED U/S OLD HIGHWAY 35 BRIDGE									
X1	5726.000	.000	.000	.000	14.000	14.000	14.000	.000	.000	.000
X3	10.000	.000	.000	11.300	442.410	22.900	442.390	.000	.000	.000
BT	16.000	.000	442.580	442.580	7.700	442.470	442.470	9.200	442.440	442.440
BT	9.500	442.430	442.430	11.200	442.410	442.410	11.300	442.410	441.960	13.900
BT	442.400	441.950	15.500	442.400	441.950	19.100	442.390	441.940	20.400	442.390
BT	441.940	22.900	442.390	441.940	24.100	442.380	441.930	27.400	442.380	441.930
BT	27.500	442.380	442.380	30.300	442.430	442.480	38.000	442.650	442.650	.000
NC	.110	.110	.065	.300	.500	.000	.000	.000	.000	.000
	SYNTHETIC X-SEC (E6) LOCATED 10 m. U/S OLD HIGHWAY 35 BRIDGE									
X1	5736.000	15.000	83.000	95.000	10.000	10.000	10.000	.000	.800	.000
GR	442.500	.000	442.000	22.000	441.500	75.000	441.000	77.000	440.500	78.000
GR	440.000	82.000	438.500	83.000	437.500	84.500	437.200	89.800	437.500	94.000
GR	438.500	95.000	440.000	96.000	442.000	98.000	442.500	138.000	445.000	210.000
NC	.110	.110	.065	.300	.500	.000	.000	.000	.000	.000
	SECTION 8 , 500 m. U/S OLD HIGHWAY 35 BRIDGE									
X1	6136.000	60.000	423.500	434.000	372.000	402.000	400.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	492.000	446.000	.000	.000	.000
GR	450.500	.000	450.000	38.000	449.500	84.500	449.000	134.000	448.500	173.500
GR	448.000	204.000	447.500	207.000	447.000	227.000	446.500	236.500	446.000	241.500
GR	445.500	249.500	445.000	254.500	444.500	259.000	444.000	262.500	443.500	268.000
GR	443.000	271.500	442.500	276.000	442.000	281.500	441.500	290.500	441.500	327.000
GR	442.000	342.000	442.000	352.000	441.500	358.000	441.500	387.000	441.160	405.000
GR	441.260	415.000	440.260	423.500	438.890	425.400	438.640	427.000	439.000	428.800
GR	439.140	431.400	439.750	432.900	440.560	434.000	441.390	440.900	444.040	449.000
GR	446.400	454.000	445.880	461.100	446.000	465.000	446.500	471.500	446.500	482.500
GR	446.000	485.000	446.000	492.000	446.000	520.500	445.500	541.000	445.500	590.000
GR	446.000	619.000	446.500	672.000	447.000	704.000	447.500	749.000	448.000	767.000
GR	448.000	896.000	447.500	932.000	447.000	954.500	446.500	1050.000	446.500	1058.000
GR	446.500	1092.500	446.500	1100.000	447.000	1102.000	447.500	1104.000	447.800	1109.000
NC	.110	.110	.065	.300	.500	.000	.000	.000	.000	.000
	SECTION 9 , SEWAGE TREATMENT PLANT - PUMPING STATION									
X1	6656.000	49.000	141.700	152.000	480.000	540.000	520.000	.000	.000	.000
GR	448.000	.000	447.500	7.500	447.000	14.000	446.500	18.500	446.000	22.000
GR	445.500	24.500	445.000	27.500	444.500	31.000	444.000	33.000	443.500	36.500
GR	443.000	38.500	442.500	41.500	442.500	88.000	442.210	106.000	442.210	116.000
GR	442.210	123.000	442.230	130.000	442.200	134.000	441.190	140.600	440.110	141.700
GR	439.480	142.900	439.540	144.100	439.750	147.000	439.730	148.700	440.100	150.400
GR	440.570	152.000	442.020	151.400	442.850	171.400	443.680	176.600	444.260	179.900
GR	447.480	187.600	447.500	190.000	448.000	208.500	448.500	232.000	448.500	240.500
GR	448.500	254.000	449.000	276.000	449.500	299.500	450.000	334.000	450.000	356.000

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GR   449.500   383.000   449.000   413.000   449.500   461.000   448.000   500.000   448.000   552.000
GR   448.000   590.500   447.500   702.000   447.500   760.000   447.500   764.000      .000      .000

NC      .110      .110      .065      .300      .500      .000      .000      .000      .000      .000
        SECTION 10  , ALLEY - 109 th. AVENUE
X1  7480.000    70.000   462.900   471.000   750.000   804.000   824.000      .000      .000      .000
X3    10.000      .000      .000      .000      .000   563.000   447.000      .000      .000      .000
GR   450.600      .000   450.500    18.500   450.000    37.500   449.500    53.500   449.000   124.000
GR   448.500   187.500   448.000   193.000   448.000   197.000   448.000   199.000   448.000   200.000
GR   448.000   201.000   448.000   203.000   448.000   204.000   448.000   206.500   448.000   208.500
GR   448.000   211.000   448.000   212.500   448.000   253.000   448.000   256.000   448.000   257.000
GR   448.000   258.500   448.000   260.000   448.000   262.500   448.000   263.500   448.000   266.500
GR   447.500   267.000   447.500   270.000   448.000   272.000   448.000   283.000   447.500   284.000
GR   447.000   285.000   446.000   286.000   445.000   286.500   444.500   288.000   444.000   290.500
GR   443.500   291.500   443.000   293.000   442.500   380.000   442.500   388.500   442.500   453.000
GR   442.600   455.000   441.820   460.600   442.330   462.900   441.390   464.900   440.940   465.700
GR   440.410   467.000   440.430   468.400   441.290   469.400   442.250   471.000   443.460   473.100
GR   443.840   476.000   444.730   479.300   444.790   480.900   445.000   509.500   445.500   512.500
GR   446.000   516.000   446.500   527.000   447.000   551.500   447.000   563.000   446.500   565.000
GR   446.000   568.000   446.500   574.000   446.500   576.000   447.000   578.500   447.500   590.000
GR   447.500   600.000   447.800   612.500   448.000   678.500   448.500   747.500   448.900   813.500

NC      .110      .110      .065      .100      .300      .000      .000      .000      .000      .000
        SECTION 11  , 150 m. D/S GOLF COURSE BRIDGE
X1  8224.000    47.000   659.400   672.600   636.000   610.000   744.000      .000      .000      .000
GR   450.000      .000   449.500    82.000   449.500   162.000   449.000   250.000   448.500   357.000
GR   448.500   381.000   448.500   391.000   448.000   480.000   448.070   491.000   448.000   569.500
GR   447.750   592.000   447.000   613.000   446.500   622.500   446.000   629.000   445.500   638.500
GR   445.000   643.000   445.240   655.900   444.430   659.400   442.370   661.200   440.990   663.900
GR   440.980   665.700   441.240   668.200   442.440   670.800   443.240   672.600   443.640   675.200
GR   444.000   678.000   444.000   707.000   444.000   720.000   444.000   743.000   444.000   779.000
GR   444.000   785.000   444.000   813.000   444.000   815.000   444.000   819.000   444.500   825.500
GR   445.000   831.500   445.000   857.000   445.000   864.000   445.000   870.000   445.000   875.500
GR   445.500   893.000   446.000   896.500   446.500   907.000   447.000   921.000   447.500   959.000
GR   447.500   994.500   447.500   998.400      .000      .000      .000      .000      .000      .000

NC      .110      .110      .065      .100      .300      .000      .000      .000      .000      .000
        SYNTHETIC X-SEC (E7) LOCATED 10 m. D/S GOLF COURSE BRIDGE
X1  8462.000    19.000   173.000   188.000   180.000   232.000   238.000      .000      .000      .000
GR   447.500      .000   447.000    70.000   446.500    88.000   446.000    98.000   445.500   106.000
GR   445.000   111.000   444.500   125.000   444.000   173.000   443.500   174.000   443.000   175.000
GR   442.500   176.000   441.000   180.000   442.500   184.000   443.000   185.000   443.500   186.000
GR   444.000   188.000   444.500   246.000   445.000   310.000   447.500   360.000      .000      .000

NC      .073      .073      .065      .300      .500      .000      .000      .000      .000      .000
        SECTION 12A , IMMED D/S GOLF COURSE BRIDGE - 105 th. AVENUE
X1  8472.000    24.000   162.800   180.600    10.000    10.000    10.000      .000      .000      .000
X3    10.000   441.300      .000   167.400   445.120   178.000   445.110      .000      .000      .000
GR   447.550      .000   444.920   156.400   445.000   159.400   445.070   162.800   443.640   162.900
GR   444.070   165.400   442.190   167.100   444.600   167.110   444.600   167.400   442.190   167.410
GR   440.930   172.100   440.920   174.800   444.610   174.810   444.610   175.100   440.920   175.110
GR   441.700   178.000   442.720   179.100   443.210   180.500   445.110   180.600   445.050   182.600
GR   444.860   189.600   445.000   265.600   447.500   375.600   448.000   391.600      .000      .000
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SECTION 12B , IMMED U/S GOLF COURSE BRIDGE - 105 th. AVENUE

X1	8484.000	.000	.000	.000	12.000	12.000	12.000	.000	.000	.000
X3	10.000	441.350	.000	172.100	445.130	178.000	445.110	.000	.000	.000
BT	24.000	.000	447.500	447.500	156.400	444.920	444.920	159.400	445.000	445.000
BT	162.800	445.070	445.070	162.900	445.070	444.550	165.400	445.110	444.590	167.100
BT	445.120	444.600	167.110	445.120	444.600	167.400	445.120	444.600	167.410	445.120
BT	444.600	172.100	445.130	444.610	174.800	445.130	444.610	174.810	445.130	444.610
BT	175.100	445.130	444.610	175.110	445.130	444.610	178.000	445.110	444.600	179.100
BT	445.110	444.600	180.500	445.110	444.600	180.600	445.110	444.600	182.600	445.050
BT	445.050	189.600	444.860	444.860	265.600	445.000	445.000	375.600	447.500	447.500
BT	375.600	448.000	448.000	.000	.000	.000	.000	.000	.000	.000
NC	.110	.110	.073	.500	.700	.000	.000	.000	.000	.000

SYNTHETIC X-SEC (E8) LOCATED 10 m. U/S GOLF COURSE BRIDGE

X1	8494.000	27.000	184.000	205.000	10.000	10.000	10.000	.000	.000	.000
GR	447.500	.000	445.500	30.000	445.000	36.000	444.500	78.000	444.000	97.000
GR	444.000	122.000	444.000	131.000	444.000	164.000	443.500	174.000	443.500	184.000
GR	443.500	187.000	443.000	187.500	442.500	190.000	441.000	193.500	442.500	197.000
GR	443.000	199.000	443.500	202.000	443.500	205.000	443.500	210.000	444.000	301.000
GR	444.500	305.000	445.000	308.000	445.500	314.000	446.000	322.000	446.500	340.000
GR	447.000	348.000	447.500	354.000	.000	.000	.000	.000	.000	.000
NC	.150	.110	.073	.500	.700	.000	.000	.000	.000	.000

SECTION 12C , 138 m. U/S GOLF COURSE BRIDGE - 105 th. AVENUE

X1	8622.000	60.000	386.000	394.800	115.000	110.000	128.000	.000	.000	.000
GR	447.500	.000	447.000	5.500	446.500	10.000	446.000	15.000	445.500	17.500
GR	445.000	21.000	444.500	22.000	444.500	47.500	444.500	107.000	444.500	108.000
GR	444.500	116.000	444.500	118.000	444.500	121.000	444.500	179.000	444.500	226.000
GR	444.500	265.500	444.500	267.000	444.500	267.500	444.500	269.000	444.500	273.000
GR	444.500	274.500	444.500	277.000	444.500	295.500	444.500	326.000	444.500	337.000
GR	444.500	351.000	444.000	352.500	443.500	354.500	443.500	355.500	443.500	358.500
GR	443.500	359.500	443.500	361.000	443.500	362.500	444.000	363.500	444.000	384.000
GR	443.500	386.000	443.000	387.500	442.500	389.000	442.190	390.500	441.550	392.000
GR	441.860	393.000	442.500	394.000	443.000	394.800	443.500	396.000	444.500	397.000
GR	445.000	398.000	445.500	400.000	446.000	410.000	446.500	426.000	447.000	442.000
GR	447.500	454.000	448.500	526.000	449.000	578.000	449.500	625.000	449.600	700.500
GR	449.500	709.000	449.200	817.000	449.200	875.000	449.300	956.500	449.300	1049.500
NC	.150	.110	.073	.500	.700	.000	.000	.000	.000	.000

SECTION 13 , 103 rd. AVENUE AT RCMP STATION

X1	8922.000	45.000	424.700	440.000	309.000	296.000	300.000	.000	.000	.000
GR	449.000	.000	449.000	15.500	448.500	59.000	448.000	68.000	447.500	76.000
GR	447.000	84.500	446.500	95.500	446.000	102.500	445.500	127.000	445.500	142.000
GR	445.000	171.000	445.000	175.000	445.000	283.500	444.500	287.000	444.500	292.000
GR	444.500	300.000	444.500	309.000	444.500	397.000	444.360	412.000	444.710	421.900
GR	444.010	424.700	443.770	428.000	442.190	430.500	441.590	432.000	441.860	433.500
GR	443.270	435.100	444.530	437.200	445.970	440.000	446.660	449.700	446.730	455.000
GR	447.000	458.000	447.500	472.500	448.000	497.000	448.500	520.000	449.000	536.500
GR	449.500	552.000	449.600	558.500	449.500	650.500	449.400	684.000	449.200	778.500
GR	449.300	859.000	449.500	883.500	449.600	915.000	449.700	973.500	449.800	1033.500

NC	.150	.110	.073	.500	.700	.000	.000	.000	.000	.000
	SECTION 14 , 120 m. D/S CNR BRIDGE									
X1	9198.000	51.000	384.000	400.700	266.000	268.000	276.000	.000	.000	.000
X3	10.000	.000	.000	123.500	449.000	.000	.000	.000	.000	.000
GR	449.500	.000	449.000	2.000	448.500	35.500	448.500	45.500	448.500	53.000
GR	448.000	59.000	447.500	67.000	447.000	73.000	446.500	79.500	446.500	81.500
GR	447.000	92.000	447.500	97.000	448.000	106.000	448.500	112.500	449.000	123.500
GR	449.000	236.000	448.500	250.000	448.000	259.000	447.500	263.000	447.000	269.000
GR	446.500	276.500	446.000	279.500	445.500	283.000	445.000	331.000	445.000	340.000
GR	445.000	349.000	444.900	384.000	444.330	385.900	443.630	387.300	443.280	388.200
GR	442.730	389.600	442.480	391.800	442.500	394.400	443.450	396.100	445.260	398.300
GR	446.060	400.700	448.810	406.000	449.450	410.700	449.570	412.700	449.700	444.000
GR	449.500	480.000	449.400	498.000	449.200	560.500	449.500	626.000	449.700	669.000
GR	450.000	713.000	450.500	785.000	451.000	842.000	451.000	859.000	451.500	883.000
GR	451.900	958.000	.000	.000	.000	.000	.000	.000	.000	.000
NC	.150	.110	.073	.500	.700	.000	.000	.000	.000	.000
	SYNTHETIC X-SEC (E9) LOCATED 8 m. D/S CNR BRIDGE									
X1	9308.000	31.000	354.000	371.000	96.000	114.000	108.000	.000	.000	.000
GR	450.000	.000	449.500	4.000	449.000	6.000	448.500	15.000	448.000	22.000
GR	447.500	44.000	447.500	92.000	447.500	218.000	447.580	234.000	447.000	255.000
GR	446.500	266.000	446.000	292.000	445.500	352.000	445.000	354.000	444.500	354.500
GR	444.000	356.000	443.500	359.000	442.500	360.000	442.500	362.000	442.500	364.000
GR	442.500	366.000	445.000	371.000	446.000	372.000	446.500	374.000	447.000	376.000
GR	447.500	377.000	448.000	378.000	448.500	378.500	449.000	380.000	449.500	381.000
GR	450.000	460.000	.000	.000	.000	.000	.000	.000	.000	.000
NC	.150	.110	.075	.500	.700	.000	.000	.000	.000	.000
	SECTION 15A , IMMED D/S CNR BRIDGE									
X1	9316.000	24.000	5.400	53.100	10.000	10.000	10.000	.000	.000	.000
X3	10.000	.000	.000	22.200	450.380	38.000	450.400	.000	.000	.000
GR	450.340	.000	450.350	5.000	449.690	5.400	449.230	5.500	448.230	11.600
GR	445.060	17.300	443.780	19.400	443.450	22.200	442.830	25.800	449.720	25.810
GR	449.720	31.500	442.830	31.510	442.870	32.500	443.770	34.200	444.230	36.800
GR	444.330	38.000	443.900	39.700	444.110	42.300	445.380	45.800	447.770	49.300
GR	449.050	52.900	449.770	53.100	450.430	53.200	450.440	60.000	.000	.000
	SECTION 15B , IMMED U/S CNR BRIDGE									
X1	9324.000	.000	.000	.000	8.000	8.000	8.000	.000	.000	.000
X3	10.000	.000	.000	22.200	450.380	38.000	450.400	.000	.000	.000
BT	21.000	.000	450.340	450.340	5.000	450.350	450.350	5.400	450.350	449.690
BT	5.500	450.350	449.690	11.600	450.360	449.700	17.300	450.370	449.710	19.400
BT	450.370	449.710	22.200	450.380	449.720	25.800	450.380	449.720	32.500	450.390
BT	449.730	34.200	450.400	449.740	36.800	450.400	449.740	38.000	450.400	449.740
BT	39.700	450.410	449.750	42.300	450.410	449.750	45.800	450.420	449.760	49.300
BT	450.420	449.760	52.900	450.430	449.770	53.100	450.430	449.770	53.200	450.430
BT	450.430	60.000	450.440	450.440	.000	.000	.000	.000	.000	.000

NC	.150	.150	.075	.300	.500	.000	.000	.000	.000	.000
	SYNTHETIC X-SEC (E10) LOCATED 12 m. U/S CNR BRIDGE									
X1	9336.000	30.000	343.000	360.000	10.000	10.000	10.000	.000	.000	.000
GR	450.000	.000	449.500	4.500	449.000	6.000	448.500	12.000	448.000	19.000
GR	447.500	60.000	447.500	249.000	447.000	252.000	446.500	259.000	446.000	268.000
GR	445.500	315.000	445.000	340.000	444.000	343.000	443.500	346.000	443.000	346.500
GR	442.500	348.000	442.500	350.000	442.500	355.000	442.500	360.000	445.000	366.000
GR	445.500	368.000	446.000	385.000	446.500	399.000	447.000	406.000	447.500	411.000
GR	448.000	418.000	448.500	423.000	449.000	436.000	449.500	474.000	450.000	510.000
NC	.150	.150	.075	.100	.300	.000	.000	.000	.000	.000
	SECTION 16 , 300 m. U/S CNR BRIDGE									
X1	9520.000	57.000	365.000	375.000	276.000	270.000	280.000	.000	.000	.000
X3	10.000	.000	.000	216.000	450.000	.000	.000	.000	.000	.000
GR	449.100	.000	449.000	4.000	448.500	5.500	448.000	7.000	448.000	16.000
GR	448.500	42.000	449.000	55.000	449.500	82.000	450.000	140.500	450.400	191.500
GR	450.000	216.000	449.500	221.000	449.000	228.000	448.500	237.000	448.000	240.000
GR	447.500	243.000	447.000	245.000	446.500	248.000	446.000	249.500	446.000	273.000
GR	446.000	285.000	445.500	289.000	445.500	311.000	445.500	320.000	445.270	358.000
GR	445.020	362.800	444.670	365.000	443.380	367.100	443.410	368.000	443.340	369.400
GR	443.190	371.300	443.280	373.700	444.090	374.500	444.510	375.000	445.810	378.200
GR	446.500	384.200	447.600	394.200	448.480	404.200	448.600	406.700	449.000	413.000
GR	449.500	429.000	450.000	457.000	450.000	509.000	450.000	513.500	450.000	522.000
GR	449.500	523.000	449.500	527.000	450.000	531.000	450.500	633.500	451.000	646.000
GR	451.500	655.000	452.000	801.000	452.500	809.500	453.000	816.000	453.000	861.500
GR	453.000	884.000	453.100	891.000	.000	.000	.000	.000	.000	.000
NC	.150	.150	.075	.100	.300	.000	.000	.000	.000	.000
	SECTION 17A , 200 m. D/S WALKING BRIDGE									
X1	9998.000	35.000	208.500	218.000	708.000	645.000	717.000	.000	.000	.000
GR	451.050	.000	450.500	20.000	450.000	70.000	449.500	151.000	449.000	157.000
GR	449.000	160.000	448.000	163.000	447.500	165.000	447.000	166.000	446.500	168.000
GR	446.000	169.000	445.500	206.000	445.000	207.500	444.000	208.500	443.000	210.000
GR	442.500	211.000	442.500	213.300	442.500	215.500	443.000	216.000	444.000	218.000
GR	445.000	219.000	445.500	221.000	446.000	222.500	446.500	236.000	446.500	294.000
GR	447.000	305.000	447.000	328.000	447.500	333.000	448.000	336.000	448.500	339.000
GR	449.000	346.000	449.500	347.000	450.000	352.000	450.000	404.000	450.400	430.000
NC	.150	.150	.075	.100	.300	.000	.000	.000	.000	.000
	SYNTHETIC X-SEC (E11) LOCATED 18 m. D/S WALKING BRIDGE									
X1	10180.000	30.000	183.000	190.000	275.000	275.000	285.000	.000	.000	.000
GR	451.100	.000	450.500	6.000	450.000	111.000	449.500	122.000	449.000	135.500
GR	448.500	136.000	448.000	138.000	447.500	140.000	447.000	141.000	446.500	142.000
GR	446.000	145.000	445.500	178.000	445.000	179.000	442.500	183.000	442.500	185.000
GR	442.500	187.000	442.500	190.000	445.000	193.000	445.500	194.000	446.000	195.000
GR	446.000	231.000	446.500	304.000	447.000	322.000	447.500	326.000	448.000	327.000
GR	448.500	328.000	449.000	350.000	449.500	381.000	450.000	383.000	450.400	418.000

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NC      .150      .150      .075      .100      .300      .000      .000      .000      .000      .000
        SECTION 17B , IMMED D/S WALKING BRIDGE
X1  10198.000    19.000   111.200   126.700    10.000    10.000    10.000      .000      .000      .000
X3     10.000      .000      .000   111.200   448.160   126.600   448.010      .000      .000      .000
GR    450.000      .000   448.200    99.300   448.100   106.300   448.150   110.100   448.160   111.200
GR    447.700   111.300   445.460   111.400   444.570   114.000   443.730   115.200   443.470   116.600
GR    443.220   118.700   443.260   121.100   443.190   123.200   444.540   125.900   444.900   126.600
GR    448.010   126.700   448.010   126.800   449.000   296.800   450.000   334.000      .000      .000

        SECTION 17C , IMMED U/S WALKING BRIDGE
X1  10204.000      .000      .000      .000     6.000     6.000     6.000      .000      .000      .000
X3     10.000      .000      .000   114.400   448.140   122.500   448.060      .000      .000      .000
BT     19.000      .000   450.000   450.000    99.300   448.200   448.200   106.300   448.100   448.100
BT    110.100   448.150   448.150   111.200   448.160   448.160   111.300   448.160   448.160   111.400
BT    448.160   447.770   114.000   448.140   447.750   115.200   448.120   447.730   116.600   448.110
BT    447.720   118.700   448.100   447.710   121.100   448.080   447.690   123.200   448.060   447.670
BT    125.900   448.030   447.640   126.600   448.010   447.620   126.700   448.010   448.010   126.800
BT    448.010   448.010   296.800   449.000   449.000   334.000   450.000   450.000      .000      .000

NC      .110      .110      .070      .100      .300      .000      .000      .000      .000      .000
        SYNTHETIC X-SEC (E12) LOCATED 10 m. U/S WALKING BRIDGE
X1  10214.000    25.000   178.000   222.000    10.000    10.000    10.000      .000      .000      .000
GR    450.700      .000   450.500    22.000   450.000    40.000   449.500    71.000   449.000    96.000
GR    448.500   119.000   448.000   138.000   447.500   149.000   447.000   156.000   446.500   158.000
GR    446.000   166.000   445.500   175.000   445.000   178.000   442.500   185.000   442.500   194.000
GR    442.500   200.000   446.500   222.000   446.500   301.000   447.000   311.000   447.500   313.000
GR    448.000   333.000   448.500   342.000   449.000   356.000   449.500   371.000   450.000   400.000

NC      .110      .110      .070      .100      .300      .000      .000      .000      .000      .000
        SECTION 17D , 289 m. U/S WALKING BRIDGE
X1  10493.000    38.000   282.500   297.000   270.000   230.000   279.000      .000      .000      .000
X3     10.000      .000      .000      .000      .000   297.000   447.000      .000      .000      .000
GR    451.000      .000   450.500     8.000   450.000    10.000   449.500    12.000   449.000    14.000
GR    448.500    15.000   448.000    17.500   447.500    19.500   447.500    21.000   447.500    24.000
GR    447.500    26.000   447.500    29.000   447.500    37.000   447.500    85.000   447.500    91.000
GR    447.500    94.500   447.500    98.500   446.500   129.000   446.000   204.500   446.000   208.000
GR    445.500   282.000   445.000   282.500   444.500   285.000   444.000   286.500   443.500   289.000
GR    444.000   291.000   444.500   293.500   445.000   297.000   445.500   299.500   446.000   318.000
GR    446.500   336.000   447.500   346.000   448.000   351.000   448.500   362.000   449.000   380.000
GR    449.500   389.000   450.000   414.000   450.400   460.500      .000      .000      .000      .000

NC      .110      .110      .070      .100      .300      .000      .000      .000      .000      .000
        SECTION 17E ,  54 m. D/S HIGHWAY 3 BRIDGE
X1  10707.000    44.000   328.500   345.000   210.000   186.000   214.000      .000      .000      .000
GR    451.000      .000   450.500     8.000   450.000    10.500   449.500    12.000   449.000    13.000
GR    448.500    15.000   448.000    16.000   447.500    17.500   447.500    19.000   447.500    20.500
GR    447.500    21.500   447.500    23.000   447.500    25.000   447.500    92.000   447.500   112.000
GR    446.500   126.000   446.500   142.000   446.500   148.000   446.500   153.000   446.500   162.500
GR    446.500   174.000   446.500   183.000   446.500   220.000   446.000   248.500   446.000   255.000
GR    446.000   292.000   446.000   304.000   446.000   328.500   445.500   330.000   445.000   338.000
GR    444.500   339.500   444.500   342.000   445.000   344.000   446.000   345.000   446.500   346.500
GR    447.000   348.000   447.500   350.000   448.000   351.000   448.500   351.500   449.000   352.500
GR    449.500   353.500   450.000   401.000   450.000   407.500   450.000   410.000      .000      .000
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NC      .070      .070      .070      .100      .300      .000      .000      .000      .000      .000
        SYNTHETIC X-SEC (E13) LOCATED 25 m. D/S HIGHWAY 3 BRIDGE
X1  10736.000    32.000   328.000   348.000    30.000    44.000    44.000      .000      .000      .000
GR    451.500      .000   451.000     4.000   450.500    12.000   450.000    14.000   449.500    17.000
GR    449.000    20.000   448.500    22.000   448.000    24.000   447.500    28.000   447.000    34.000
GR    446.500    38.000   446.500    84.000   446.000    91.000   446.000   126.000   446.000   256.000
GR    446.000   322.000   445.500   324.000   445.000   328.000   444.500   333.000   443.500   336.000
GR    444.200   337.000   444.200   338.500   444.200   340.000   444.200   342.000   444.200   344.000
GR    445.000   346.000   447.500   348.000   448.000   350.000   448.500   352.000   449.000   354.000
GR    449.500   357.000   450.000   391.000      .000      .000      .000      .000      .000      .000

NC      .070      .070      .070      .300      .500      .000      .000      .000      .000      .000
        SECTION 18A , IMMED D/S HIGHWAY 3 BRIDGE
X1  10761.000    20.000   191.600   213.400    10.000    10.000    10.000      .000      .000      .000
X3     10.000      .000      .000   193.000   449.500   213.300   449.400      .000      .000      .000
GR    449.500      .000   449.170   190.500   449.190   191.600   445.620   191.700   444.900   195.400
GR    444.200   197.900   448.740   197.910   448.740   198.200   444.200   198.210   444.150   200.500
GR    444.190   202.500   444.580   204.700   448.810   204.710   448.810   205.000   444.580   205.010
GR    446.490   208.100   447.830   213.300   449.400   213.400   449.420   214.400   449.510   221.700

        SECTION 18B , IMMED U/S HIGHWAY 3 BRIDGE
X1  10778.000      .000      .000      .000    17.000    17.000    17.000      .000      .000      .000
X3     10.000      .000      .000   193.000   449.500   213.300   449.400      .000      .000      .000
BT     20.000      .000   449.500   449.500   190.500   449.170   449.170   191.600   449.190   449.190
BT    191.700   449.190   448.690   195.400   449.220   448.720   197.900   449.240   448.740   197.910
BT    449.240   448.740   198.200   449.240   448.740   198.210   449.240   448.740   200.500   449.270
BT    448.770   202.500   449.300   448.800   204.700   449.310   448.810   204.710   449.310   448.810
BT    205.000   449.310   448.810   205.010   449.310   448.810   208.100   449.350   448.850   213.300
BT    449.400   448.900   213.400   449.400   449.400   214.400   449.420   449.420   221.700   449.510
BT    449.510      .000      .000      .000      .000      .000      .000      .000      .000      .000

NC      .070      .070      .070      .300      .500      .000      .000      .000      .000      .000
        SYNTHETIC X-SEC (E14) LOCATED 20 m. U/S HIGHWAY 3 BRIDGE
X1  10798.000    28.000   376.000   391.000    10.000    10.000    10.000      .000      .000      .000
GR    451.500      .000   451.000    44.000   450.500    45.000   450.000    50.000   449.500    59.000
GR    449.000    76.000   448.500   112.000   448.000   114.000   447.500   116.000   447.000   118.000
GR    446.500   156.000   446.000   170.000   446.000   320.000   446.000   356.000   446.000   374.000
GR    445.500   376.000   445.000   378.000   444.500   378.500   444.200   380.500   444.200   385.000
GR    444.200   388.000   445.000   391.000   447.500   396.000   448.000   404.000   448.500   410.000
GR    449.000   419.000   449.500   456.000   450.000   475.000      .000      .000      .000      .000

NC      .070      .070      .070      .300      .500      .000      .000      .000      .000      .000
        SECTION 19 , 300 m. U/S HIGHWAY 3 BRIDGE
X1  11084.000    43.000   335.000   352.500   276.000   316.000   296.000      .000      .000      .000
GR    453.000      .000   452.500    59.000   452.000   114.000   451.500   144.000   451.000   173.000
GR    450.500   201.000   450.000   229.500   449.500   231.000   449.000   232.000   448.500   233.500
GR    448.000   236.000   447.500   237.500   447.000   244.000   446.500   253.500   446.500   295.000
GR    446.500   335.000   445.720   337.000   445.030   339.000   444.240   339.700   443.760   341.600
GR    444.070   343.400   444.200   344.800   444.700   346.600   445.700   349.800   446.400   352.500
GR    446.500   417.000   446.500   428.000   447.000   455.000   447.500   482.000   448.000   495.000
GR    448.500   522.000   448.500   540.000   448.000   550.000   448.500   560.000   449.000   563.000
GR    449.000   612.000   448.500   631.000   448.500   636.000   449.000   680.000   449.000   706.500
GR    449.000   742.000   449.500   755.000   450.000   783.000      .000      .000      .000      .000
```

NC	.110	.110	.070	.100	.300	.000	.000	.000	.000	.000
	SECTION 20 , 1300 m. FROM U/S END OF STUDY AREA									
X1	14086.000	58.000	422.000	432.900	2810.000	2744.000	3002.000	.000	.000	.000
GR	451.000	.000	450.500	25.500	450.000	33.400	449.500	41.000	449.000	45.000
GR	448.500	53.500	448.500	93.000	449.000	98.000	449.500	103.000	450.000	110.000
GR	450.500	116.000	451.000	121.500	451.500	129.000	452.000	138.500	452.500	146.000
GR	453.000	172.000	453.000	366.000	452.500	380.500	452.000	388.000	451.500	394.500
GR	451.000	398.500	450.500	404.500	450.000	407.000	449.500	410.000	448.510	412.000
GR	447.560	422.000	446.770	423.300	446.350	424.000	445.900	425.100	445.690	426.200
GR	445.630	427.200	445.670	428.300	446.250	430.000	447.250	431.300	447.450	431.900
GR	447.760	432.900	448.420	440.300	448.700	450.000	448.500	574.000	448.500	577.500
GR	448.500	586.500	448.500	598.000	448.500	631.500	449.000	637.500	449.000	643.500
GR	450.000	646.500	450.500	656.000	451.000	657.500	451.500	661.500	452.000	668.500
GR	452.500	677.500	453.000	690.000	453.500	718.000	454.000	742.000	454.000	786.000
GR	454.000	816.000	454.500	879.000	455.000	984.000	.000	.000	.000	.000
NC	.110	.110	.070	.100	.300	.000	.000	.000	.000	.000
	SECTION 21 , MOST UPSTREAM CROSS SECTION									
X1	15286.000	51.000	218.800	229.900	1064.000	866.000	1200.000	.000	.000	.000
GR	454.500	.000	454.000	2.000	453.500	4.000	453.000	5.500	452.500	9.000
GR	452.000	11.000	450.500	13.500	450.000	15.000	449.500	17.000	449.000	20.000
GR	449.000	61.000	449.000	105.000	449.000	116.000	449.000	129.000	449.000	135.000
GR	449.000	167.000	449.000	176.000	449.000	202.000	449.480	206.500	448.780	215.700
GR	447.950	218.800	447.520	222.400	446.380	223.500	446.300	224.600	446.560	225.600
GR	447.950	226.500	448.300	228.200	449.070	229.900	448.980	235.400	449.000	241.900
GR	449.530	248.500	449.500	280.000	449.500	287.000	449.500	291.500	449.500	308.000
GR	449.500	317.000	449.500	326.000	449.500	329.000	450.000	331.000	450.500	334.500
GR	451.000	337.000	451.500	340.000	452.000	346.000	452.000	360.000	452.000	380.000
GR	452.500	390.000	453.000	399.000	453.500	407.000	454.000	414.500	454.500	423.500
GR	455.000	441.000	.000	.000	.000	.000	.000	.000	.000	.000
EJ	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

THIS RUN EXECUTED 11-30-88

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HEC2 RELEASE DATED NOV 76 UPDATED MAY 1984
ERROR CORR - 01,02,03,04,05,06
MODIFICATION - 50,51,52,53,54,55,56
IBM-PC-XT VERSION AUGUST 1985
****

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

ALT. BRIDGE SIM. TECHNIQ

SUMMARY PRINTOUT

SECNO	EG	CWSEL	CRIWS	K*XNL	K*XNCH	K*XNR	QLOB	QCH	QROB
1960.000	435.19	435.14	433.35	110.00	55.00	110.00	.99	34.32	1.39
3000.000	436.59	436.51	435.06	110.00	55.00	110.00	4.26	30.23	2.22
3880.000	437.48	437.45	435.97	110.00	55.00	110.00	5.81	18.24	12.65
4400.000	438.17	438.05	437.14	110.00	55.00	110.00	.00	33.19	3.51
4468.000	438.24	438.24	436.88	70.00	55.00	70.00	11.12	17.94	7.65
4478.000	438.29	438.24	436.50	110.00	70.00	110.00	.00	36.70	.00
4494.000	438.47	438.31	436.79	110.00	70.00	110.00	.00	36.70	.00
4504.000	438.56	438.55	436.88	70.00	70.00	70.00	14.51	19.51	2.68
4628.000	438.64	438.63	437.33	70.00	70.00	70.00	3.26	13.17	20.26
4638.000	438.71	438.62	437.59	70.00	70.00	70.00	2.50	31.47	2.73
4676.000	438.77	438.77	436.32	70.00	70.00	70.00	3.42	10.49	22.79
4686.000	439.21	438.72	438.23	70.00	75.00	70.00	.00	36.70	.00
4700.000	440.15	439.88	438.23	70.00	75.00	70.00	.00	36.70	.00
4740.000	440.29	440.29	437.20	110.00	70.00	110.00	10.82	5.06	20.82
4800.000	440.30	440.30	437.20	110.00	70.00	110.00	8.81	4.12	23.77
5170.000	440.31	440.30	436.94	110.00	70.00	110.00	17.08	18.85	.78
5500.000	440.39	440.37	438.45	110.00	70.00	110.00	19.67	13.90	3.13

SECNO	EG	CWSEL	CRIWS	K*XNL	K*XNCH	K*XNR	QLOB	QCH	QROB
5702.000	440.56	440.54	438.84	110.00	70.00	110.00	2.92	32.90	.88
5712.000	440.64	440.53	439.31	110.00	70.00	110.00	.00	36.70	.00
5726.000	440.72	440.62	439.31	110.00	70.00	110.00	.00	36.70	.00
5736.000	440.75	440.67	439.27	110.00	65.00	110.00	.14	36.42	.14
6136.000	441.66	441.60	440.28	110.00	65.00	110.00	5.19	30.15	1.36
6656.000	442.53	442.49	440.92	110.00	65.00	110.00	3.48	28.97	4.25
7480.000	443.33	443.33	442.69	110.00	65.00	110.00	25.31	11.23	.15
8224.000	444.20	444.14	442.60	110.00	65.00	110.00	.00	33.74	2.96
8462.000	444.63	444.59	443.06	110.00	65.00	110.00	2.93	30.21	3.56
8472.000	444.67	444.60	442.65	73.00	65.00	73.00	.00	36.70	.00
8484.000	444.84	444.62	443.08	73.00	65.00	73.00	.00	36.70	.00
8494.000	444.95	444.95	443.17	110.00	73.00	110.00	10.91	12.02	13.77
8622.000	444.98	444.98	443.74	150.00	73.00	110.00	22.56	13.33	.82
8922.000	445.22	445.21	443.88	150.00	73.00	110.00	18.96	17.74	.00
9198.000	445.60	445.57	444.02	150.00	73.00	110.00	8.61	28.09	.00
9308.000	445.78	445.74	443.91	150.00	73.00	110.00	.37	36.29	.04
9316.000	445.88	445.75	444.60	150.00	75.00	110.00	.00	36.70	.00
9324.000	445.98	445.86	444.59	150.00	75.00	110.00	.00	36.70	.00
9336.000	446.02	446.01	443.42	150.00	75.00	150.00	3.34	30.18	3.18
9520.000	446.20	446.17	444.63	150.00	75.00	150.00	12.73	23.17	.79
9998.000	446.78	446.76	444.05	150.00	75.00	150.00	6.93	26.73	3.04
10180.000	446.90	446.88	443.85	150.00	75.00	150.00	7.90	19.02	9.78
10198.000	446.91	446.88	444.51	150.00	75.00	150.00	.00	36.70	.00
10204.000	446.94	446.85	444.68	150.00	75.00	150.00	.00	36.70	.00
10214.000	446.95	446.94	443.28	110.00	70.00	110.00	1.64	33.60	1.46
10493.000	446.98	446.97	445.16	110.00	70.00	110.00	21.64	15.06	.00

SECNO	EG	CWSEL	CRIWS	K*XNL	K*XNCH	K*XNR	QLOB	QCH	QROB
10707.000	447.04	447.03	445.86	110.00	70.00	110.00	23.45	13.06	.19
10736.000	447.04	447.04	445.09	70.00	70.00	70.00	27.87	8.83	.00
10761.000	447.07	447.01	445.50	70.00	70.00	70.00	.00	36.70	.00
10778.000	447.15	447.10	445.50	70.00	70.00	70.00	.00	36.70	.00
10798.000	447.17	447.17	445.30	70.00	70.00	70.00	28.57	7.68	.46
11084.000	447.20	447.19	445.51	70.00	70.00	70.00	10.70	14.00	12.01
14086.000	448.78	448.74	447.38	110.00	70.00	110.00	3.82	27.13	5.75
15286.000	449.72	449.72	448.54	110.00	70.00	110.00	22.62	11.21	2.87

ALT. BRIDGE SIM. TECHNIQ

SUMMARY PRINTOUT

SECNO	Q	QWEIR	QPR	SSTA	ENDST	DEPTH	STCHL	STCHR
1960.000	36.70	.00	.00	9.94	95.08	3.24	44.10	55.40
3000.000	36.70	.00	.00	337.97	590.53	3.25	523.50	531.40
3880.000	36.70	.00	.00	256.90	429.00	3.35	325.40	331.60
4400.000	36.70	.00	.00	35.30	266.36	2.60	35.30	45.70
4468.000	36.70	.00	.00	127.51	406.13	3.24	278.00	294.00
4478.000	36.70	.00	.00	5.10	19.70	2.94	1.20	31.40
4494.000	36.70	.00	.00	10.00	17.50	2.91	1.20	31.40
4504.000	36.70	.00	.00	4.30	142.70	3.55	113.00	125.00
4628.000	36.70	.00	.00	111.48	193.69	2.73	125.50	134.60
4638.000	36.70	.00	.00	119.51	192.44	2.72	129.50	139.50
4676.000	36.70	.00	.00	121.44	245.03	3.77	154.00	164.00
4686.000	36.70	.00	.00	85.30	91.20	2.12	78.90	96.70
4700.000	36.70	.00	.00	85.30	91.20	3.28	78.90	96.70
4740.000	36.70	.00	.00	12.53	410.40	5.11	120.00	127.50
4800.000	36.70	.00	.00	12.53	410.42	5.12	120.00	127.50
5170.000	36.70	.00	.00	119.61	269.18	5.12	245.10	260.00
5500.000	36.70	.00	.00	509.92	553.45	3.30	531.60	537.60
5702.000	36.70	.00	.00	61.08	93.46	2.54	70.00	90.00
5712.000	36.70	.00	.00	11.30	22.20	2.56	11.20	27.50
5726.000	36.70	.00	.00	11.30	22.90	2.65	11.20	27.50
5736.000	36.70	.00	.00	82.09	95.91	2.67	83.00	95.00
6136.000	36.70	.00	.00	288.60	441.56	2.96	423.50	434.00
6656.000	36.70	.00	.00	89.09	166.97	3.01	141.70	152.00
7480.000	36.70	.00	.00	292.01	472.87	2.92	462.90	471.00

SECNO	Q	QWEIR	QPR	SSTA	ENDST	DEPTH	STCHL	STCHR
8224.000	36.70	.00	.00	659.66	820.79	3.16	659.40	672.60
8462.000	36.70	.00	.00	122.37	258.03	3.59	173.00	188.00
8472.000	36.70	.00	.00	167.40	178.00	3.30	162.80	180.60
8484.000	36.70	.00	.00	172.10	178.00	3.27	162.80	180.60
8494.000	36.70	.00	.00	40.72	307.66	3.95	184.00	205.00
8622.000	36.70	.00	.00	21.05	397.95	3.43	386.00	394.80
8922.000	36.70	.00	.00	158.80	438.52	3.62	424.70	440.00
9198.000	36.70	.00	.00	282.51	399.23	3.09	384.00	400.70
9308.000	36.70	.00	.00	323.09	371.74	3.24	354.00	371.00
9316.000	36.70	.00	.00	22.20	38.00	2.92	5.40	53.10
9324.000	36.70	.00	.00	22.20	38.00	3.03	5.40	53.10
9336.000	36.70	.00	.00	267.86	385.22	3.51	343.00	360.00
9520.000	36.70	.00	.00	248.99	381.32	2.98	365.00	375.00
9998.000	36.70	.00	.00	166.95	299.76	4.26	208.50	218.00
10180.000	36.70	.00	.00	141.23	317.85	4.38	183.00	190.00
10198.000	36.70	.00	.00	111.34	126.60	3.68	111.20	126.70
10204.000	36.70	.00	.00	114.40	122.50	3.63	111.20	126.70
10214.000	36.70	.00	.00	156.23	309.87	4.44	178.00	222.00
10493.000	36.70	.00	.00	114.67	297.00	3.47	282.50	297.00
10707.000	36.70	.00	.00	118.53	348.13	2.53	328.50	345.00
10736.000	36.70	.00	.00	33.52	347.63	3.54	328.00	348.00
10761.000	36.70	.00	.00	193.00	210.13	2.86	191.60	213.40
10778.000	36.70	.00	.00	193.00	210.45	2.95	191.60	213.40
10798.000	36.70	.00	.00	117.33	395.34	2.97	376.00	391.00
11084.000	36.70	.00	.00	241.38	465.87	3.43	335.00	352.50
14086.000	36.70	.00	.00	49.45	634.36	3.11	422.00	432.90

SECNO	Q	QWEIR	QPR	SSTA	ENDST	DEPTH	STCHL	STCHR
15286.000	36.70	.00	.00	16.12	329.88	3.42	218.90	229.90

SUMMARY OF ERRORS AND SPECIAL NOTES

THIS RUN EXECUTED 11-30-88

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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
  ERROR CORR -  01,02,03,04,05,06
  MODIFICATION -  50,51,52,53,54,55,56
  IBM-PC-XT VERSION AUGUST 1985
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**********************************************************
*  WATER SURFACE PROFILES                                *
*  VERSION OF NOVEMBER 1976                              *
*  UPDATED MAY 1984                                      *
*  IBM-PC-XT VERSION AUGUST 1985                         *
*  RUN DATE  11-30-88   TIME  20:27:54                   *
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**************************************
*  U.S. ARMY CORPS OF ENGINEERS      *
*  THE HYDROLOGIC ENGINEERING CENTER *
*  609 SECOND STREET, SUITE D        *
*  DAVIS, CALIFORNIA 95616           *
   *  (916) 440-2105 (FTS) 448-2105
**************************************
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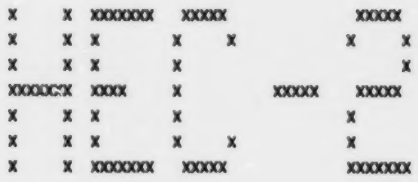

THIS RUN EXECUTED 11-30-88

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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
  ERROR CORR -  01,02,03,04,05,06
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  IBM-PC-XT VERSION AUGUST 1985
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C
T1      TISDALE HYDRAULICS STUDY
T2      DOGHIDE RIVER AT TISDALE - APR 30,1979
T3      ALT. BRIDGE SIM. TECHNIQUE

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0.        0.        0.        0.   .001070      1.00       1.0      22.   434.000      .000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECN     FN        ALLDC     IBW       CHNIM     ITRACE

    -1.000      .000    -1.000      .000      .000    -1.100    -1.000      .000      .000      .000

J3  VARIABLE CODES FOR SUMMARY PRINTOUT

    38.000    3.000    1.000    2.000   16.000   17.000   18.000   13.000   14.000   15.000

     .000   38.000   43.000   46.000   47.000   53.000   54.000    8.000   21.000   22.000

J5  LPRNT    NUMSEC                    ********REQUESTED SECTION NUMBERS********

    -10.000  -10.000     .000     .000     .000     .000     .000     .000     .000     .000

NC      .110     .110     .055     .500     .700     .000     .000     .000     .000     .000
          CROSS SECTION 1-C , 1.1 km. DOWNSTREAM OF THE STUDY AREA
X1   1960.000   20.000   44.100   55.400    .000     .000     .000     .000     .000     .000
GR    438.000    .000   435.120   10.000  434.970   20.000  435.040   30.000  434.970   40.000
GR    433.800   44.100  432.090   46.300  432.130   48.600  431.900   51.500  432.200   53.500
GR    432.780   54.200  433.610   55.400  434.400   58.900  435.060   60.900  435.310   69.300
GR    435.200   79.300  435.090   89.300  435.170   99.300  435.190  109.300  438.000  299.990

NC      .110     .110     .055     .300     .500     .000     .000     .000     .000     .000
        SECTION 1-B , MOST D/S X-SECTION IN STUDY AREA
X1   3000.000   64.000  523.500  531.400  1040.000 1040.000 1040.000    .000     .000     .000
X3     10.000    .000     .000     .000     .000   537.000  436.500    .000     .000     .000
GR    444.900    .000   444.500    7.000  444.000    9.000  443.500   11.000  443.500   21.500
GR    443.500   42.000  443.000  104.000  442.500  146.000  442.000  178.000  442.000  197.000
GR    442.000  270.000  441.500  305.000  441.000  314.000  440.500  318.000  440.000  322.000
GR    439.500  323.500  439.000  325.000  438.500  327.000  438.000  332.000  437.500  333.500
GR    437.000  336.000  436.500  338.000  436.500  372.500  436.500  402.000  436.500  421.500
GR    436.500  425.500  436.500  428.500  436.500  433.500  436.500  438.000  436.500  466.000
GR    436.500  488.000  435.950  500.000  435.900  501.900  436.210  511.700  436.300  517.700
GR    435.410  521.500  434.430  523.500  433.610  525.900  433.260  528.200  433.400  529.500
GR    434.210  530.600  434.910  531.400  435.450  533.200  435.650  537.000  436.000  558.000
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GR	436.000	585.000	436.500	590.500	437.500	595.000	438.000	597.000	438.500	600.000

GR	439.000	602.000	439.500	606.000	440.000	610.000	440.500	613.000	441.000	617.000
GR	441.500	624.000	442.000	671.000	442.000	710.000	441.500	730.000	441.000	757.000
GR	441.000	800.000	441.500	851.000	442.000	866.000	442.500	883.000	.000	.000
NC	.110	.110	.055	.300	.500	.000	.000	.000	.000	.000
	SECTION 1-A , 600 m. D/S HIGHWAY 35 BRIDGE									
X1	3880.000	74.000	325.400	331.600	850.000	778.000	880.000	.000	.000	.000
X3	10.000	.000	.000	121.000	444.000	429.000	438.000	.000	.000	.000
GR	443.700	.000	443.500	6.500	443.000	9.000	442.500	11.500	442.000	15.800
GR	442.000	22.500	442.500	24.000	443.000	26.000	443.500	27.000	440.000	29.000
GR	440.000	72.500	440.000	97.000	444.000	121.000	443.500	212.000	443.000	225.000
GR	442.500	232.500	442.000	234.000	441.500	237.500	441.000	241.000	440.500	244.100
GR	440.000	247.500	439.500	250.000	439.000	251.500	438.500	254.000	438.000	255.000
GR	437.500	256.800	437.000	258.000	437.000	263.000	437.000	271.000	437.000	276.000
GR	437.280	304.000	436.760	312.700	436.430	323.700	435.300	324.600	434.410	325.400
GR	434.100	326.200	434.350	327.600	434.540	329.400	434.860	331.600	435.870	334.600
GR	436.310	336.600	437.030	346.100	436.500	350.500	436.500	354.000	436.500	357.000
GR	436.500	359.000	436.500	362.500	436.500	364.800	437.000	366.000	437.000	401.500
GR	437.000	420.600	437.000	423.000	437.000	429.000	437.000	431.000	437.000	435.500
GR	437.000	438.000	437.000	439.000	437.000	440.000	437.000	461.000	437.000	470.000
GR	437.000	475.500	437.500	478.000	438.000	481.000	438.500	483.800	439.000	487.000
GR	439.500	489.500	440.000	495.500	440.500	502.000	441.000	591.000	441.500	645.500
GR	442.000	684.500	442.500	713.000	443.000	759.000	443.200	823.500	.000	.000
NC	.110	.110	.055	.300	.500	.000	.000	.000	.000	.000
	SECTION 1 , 78 m. D/S HIGHWAY 35 BRIDGE									
X1	4400.000	33.000	35.300	45.700	504.000	368.000	520.000	.000	.000	.000
X3	10.000	.000	.000	35.300	440.200	.000	.000	.000	.000	.000
GR	440.200	.000	440.000	5.500	439.500	9.500	439.000	10.500	438.500	12.000
GR	437.880	20.000	437.450	26.600	436.620	35.300	436.390	38.200	435.450	41.900
GR	436.310	45.700	436.930	48.400	438.000	49.600	438.000	77.500	438.000	118.000
GR	438.000	142.500	438.000	153.500	438.000	164.000	438.000	187.000	438.000	258.000
GR	438.000	266.000	438.500	270.500	439.000	275.000	439.500	279.000	440.000	286.000
GR	440.500	292.500	441.000	300.500	441.500	314.000	442.000	330.000	442.500	351.000
GR	443.000	369.000	443.500	392.000	443.500	435.000	.000	.000	.000	.000
NC	.070	.070	.055	.100	.300	.000	.000	.000	.000	.000
	SYNTHETIC X-SEC (E1) LOCATED 10 m. D/S HIGHWAY 35 BRIDGE									
X1	4468.000	30.000	278.000	294.000	36.000	94.000	68.000	.000	.000	.000
GR	442.640	.000	442.500	4.000	442.500	83.000	440.000	90.000	439.000	100.000
GR	438.500	110.000	438.000	144.000	437.500	190.000	437.500	215.000	438.000	228.000
GR	438.000	277.000	437.500	278.000	437.000	279.500	436.000	281.500	435.000	282.500
GR	435.500	286.000	436.000	288.000	436.500	290.000	437.000	292.000	437.500	294.000
GR	438.000	378.000	438.500	436.000	439.000	442.000	439.500	446.000	440.000	452.000
GR	440.500	460.000	441.000	478.000	441.500	502.000	442.000	545.000	442.500	582.000
NC	.110	.110	.055	.700	.900	.000	.000	.000	.000	.000
	SECTION 2A , IMMED D/S HIGHWAY 35 BRIDGE									
X1	4478.000	27.000	1.200	31.400	10.000	10.000	10.000	.000	.000	.000
X3	10.000	435.400	.000	5.100	439.950	19.700	439.940	.000	.000	.000
GR	439.950	.000	439.950	.800	439.950	1.200	437.560	1.300	436.000	5.100
GR	436.120	7.000	435.400	8.500	435.220	12.600	435.230	15.100	439.450	15.110
GR	439.450	15.400	435.230	15.410	435.370	16.600	435.850	18.400	436.600	19.700
GR	437.820	24.400	439.450	24.410	439.450	24.700	437.820	24.710	438.300	29.900

GR	438.650	31.300	439.930	31.400	439.930	32.400	439.930	32.900	439.930	34.600
GR	439.930	36.900	442.000	216.000	.000	.000	.000	.000	.000	.000
	SECTION 2B , IMMED U/S HIGHWAY 35 BRIDGE									
X1	4494.000	.000	.000	.000	16.000	16.000	16.000	.000	.000	.000
X3	10.000	435.700	.000	8.500	439.950	12.600	439.940	.000	.000	.000
BT	27.000	.000	439.950	439.950	.800	439.950	439.950	1.200	439.950	439.950
BT	1.300	439.950	439.460	5.100	439.950	439.460	7.000	439.950	439.950	8.500
BT	439.950	439.460	12.600	439.940	439.450	15.100	439.940	439.450	15.110	439.940
BT	439.450	15.400	439.940	439.450	15.410	439.940	439.450	16.600	439.940	439.450
BT	18.400	439.940	439.450	19.700	439.940	439.450	24.400	439.940	439.450	24.410
BT	439.940	439.450	24.700	439.940	439.450	24.710	439.940	439.450	29.900	439.930
BT	439.440	31.300	439.930	439.440	31.400	439.930	439.930	32.400	439.930	439.930
BT	32.900	439.930	439.930	34.600	439.930	439.930	36.900	439.930	439.930	216.000
BT	442.000	442.000	.000	.000	.000	.000	.000	.000	.000	.000
NC	.070	.070	.070	.500	.700	.000	.000	.000	.000	.000
	SYNTHETIC X-SEC (E2) LOCATED 10 m. U/S HIGHWAY 35 BRIDGE									
X1	4504.000	16.000	113.000	125.000	10.000	10.000	10.000	.000	.000	.000
GR	440.000	.000	439.500	1.000	439.000	2.000	438.500	4.500	438.000	10.000
GR	438.000	110.000	437.500	113.000	437.000	114.000	436.000	116.000	435.000	118.000
GR	435.000	120.000	437.500	125.000	438.000	135.000	438.500	138.000	439.000	196.000
GR	439.900	200.000	.000	.000	.000	.000	.000	.000	.000	.000
NC	.070	.070	.070	.500	.700	.000	.000	.000	.000	.000
	SECTION 3A , 134 m. U/S HIGHWAY 35 BRIDGE									
X1	4628.000	50.000	125.500	134.600	134.000	108.000	124.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	223.000	440.000	.000	.000	.000
GR	444.000	.000	444.000	69.000	443.500	77.000	443.000	80.000	442.500	82.000
GR	442.000	85.500	441.500	92.000	441.000	100.000	440.500	102.000	440.000	104.000
GR	439.500	106.000	439.000	110.000	438.730	111.000	437.710	115.500	437.760	125.500
GR	435.900	126.900	435.970	129.500	436.070	131.900	436.480	134.600	437.670	144.600
GR	437.500	146.400	437.450	155.200	437.490	161.700	437.570	171.300	438.290	178.200
GR	439.000	211.500	439.500	214.000	440.000	223.000	439.500	230.000	439.000	233.000
GR	438.500	235.000	438.000	241.000	437.500	244.000	437.500	246.500	438.000	249.000
GR	438.500	251.500	438.500	255.500	438.000	278.000	438.000	308.000	438.500	314.000
GR	439.000	316.000	439.500	318.500	440.000	321.000	440.500	330.000	441.000	340.000
GR	441.500	358.000	442.000	415.500	442.500	451.000	443.000	469.000	443.500	481.000
NC	.070	.070	.070	.500	.700	.000	.000	.000	.000	.000
	SECTION 3B , 48 m. D/S GRID ROAD BRIDGE									
X1	4638.000	53.000	129.500	139.500	10.000	10.000	10.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	219.500	439.500	.000	.000	.000
GR	444.000	.000	444.000	25.000	443.500	45.000	443.000	53.000	443.500	61.000
GR	443.500	78.000	443.000	80.000	442.500	83.000	442.000	87.500	441.500	94.000
GR	441.000	110.500	440.500	114.500	440.000	115.500	439.500	117.000	439.000	118.000
GR	438.500	120.000	438.000	128.000	437.500	129.500	435.900	132.000	435.970	134.500
GR	436.070	135.500	436.480	136.500	437.500	139.500	438.000	141.000	438.500	143.500
GR	438.500	154.500	438.500	174.500	438.500	181.500	438.500	184.500	439.000	217.000
GR	439.500	219.500	439.500	236.500	439.000	238.000	438.500	240.500	438.000	247.000
GR	437.500	249.500	437.500	251.500	438.000	254.500	438.000	259.500	438.000	284.000
GR	438.000	296.500	438.000	309.000	438.500	314.000	439.000	317.000	439.500	320.000
GR	440.000	323.000	440.500	331.000	441.000	338.000	441.500	352.000	442.000	406.000
GR	442.500	449.500	443.000	468.000	443.500	481.000	.000	.000	.000	.000

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NC      .070      .070      .070      .500      .700      .000      .000      .000      .000      .000
          SYNTHETIC X-SEC (E3) LOCATED 10 m. D/S GRID ROAD BRIDGE
X1   4676.000    26.000   154.000   164.000    38.000    38.000    46.000      .000      .000      .000
GR    444.500      .000   444.000     7.000   443.500    24.000   443.000    48.000   442.500    70.000
GR    442.000    85.000   441.500    96.000   441.000   108.000   440.500   110.000   440.000   111.000
GR    439.500   111.500   439.000   114.000   438.000   146.000   437.500   150.000   435.000   154.000
GR    435.000   159.000   435.500   162.000   436.000   163.000   436.500   164.000   437.000   174.000
GR    437.000   205.000   437.500   214.000   437.500   240.000   438.000   242.000   438.500   244.000
GR    439.800   249.000      .000      .000      .000      .000      .000      .000      .000      .000

NC      .070      .070      .070      .500      .700      .000      .000      .000      .000      .000
          SECTION 4A , IMMED D/S GRID ROAD BRIDGE
X1   4686.000    24.000    78.900    96.700    10.000    10.000    10.000      .000      .000      .000
X3     10.000   436.600      .000    83.900   439.980    88.800   439.970      .000      .000      .000
GR    442.500      .000   440.000    73.300   439.980    78.900   437.150    79.000   437.360    81.400
GR    435.500    83.900   435.290    85.300   439.430    85.310   439.430    85.600   435.290    85.610
GR    435.300    87.200   435.460    88.800   436.560    91.200   439.400    91.210   439.400    91.500
GR    436.560    91.510   437.670    96.600   439.900    96.700   439.830   100.600   439.790   102.300
GR    439.740   105.400   439.680   110.500   440.000   260.500   442.500   344.500      .000      .000

          SECTION 4B , IMMED U/S GRID ROAD BRIDGE
X1   4700.000      .000      .000      .000    14.000    14.000    14.000      .000      .000      .000
X3     10.000   436.600      .000    85.300   439.980    88.800   439.970      .000      .000      .000
BT     24.000      .000   442.500   442.500    73.300   440.000   440.000    78.900   439.980   439.980
BT     79.000   439.980   439.430    81.400   439.980   439.430    83.900   439.980   439.330    85.300
BT    439.980   439.430    85.310   439.980   439.430    85.600   439.980   439.430    85.610   439.980
BT    439.430    87.200   439.980   439.430    88.800   439.970   439.420    91.200   439.950   439.400
BT     91.210   439.950   439.400    91.500   439.950   439.400    91.510   439.950   439.400    96.600
BT    439.900   439.350    96.700   439.900   439.900   100.600   439.830   439.830   102.300   439.790
BT    439.790   105.400   439.740   439.740   110.500   439.680   439.680   260.500   440.000   440.000
BT    344.500   442.500   442.500      .000      .000      .000      .000      .000      .000      .000

NC      .110      .110      .070      .500      .700      .000      .000      .000      .000      .000
          SYNTHETIC X-SEC (E4) LOCATED 40 m. U/S GRID ROAD BRIDGE
X1   4740.000    46.000   120.000   127.500    40.000    40.000    40.000      .000      .000      .000
X3     10.000      .000      .000      .000      .000   303.500   439.500      .000      .000      .000
GR    443.500      .000   443.000     3.000   442.500     4.500   442.000     5.500   441.500     7.500
GR    441.000     9.000   440.500    11.500   440.000    14.000   439.500    16.500   439.000    22.500
GR    438.500    38.500   438.500    59.500   438.500    95.000   438.500    96.000   438.500   101.500
GR    438.000   112.500   437.500   114.000   437.000   117.000   436.660   120.000   435.730   121.500
GR    435.180   123.500   436.500   127.500   437.000   129.000   437.500   129.500   438.000   134.000
GR    438.500   166.000   438.500   195.500   438.300   264.500   438.500   286.000   439.000   287.500
GR    439.500   290.000   439.500   303.500   439.000   307.500   438.500   309.000   438.000   319.000
GR    438.000   336.000   438.500   385.000   439.000   393.000   439.500   398.500   440.000   406.000
GR    440.500   413.500   441.000   421.500   441.500   428.500   442.000   439.500   442.500   454.500
GR    443.000   498.500      .000      .000      .000      .000      .000      .000      .000      .000

NC      .110      .110      .070      .100      .300      .000      .000      .000      .000      .000
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SECTION 4C , 100 m. U/S GRID ROAD BRIDGE

X1	4800.000	.000	.000	.000	60.000	60.000	60.000	.000	.000	.000
NC	.110	.110	.070	.100	.300	.000	.000	.000	.000	.000

SECTION 5 , 500 m. U/S GRID ROAD BRIDGE

X1	5170.000	57.000	245.100	260.000	364.000	356.000	370.000	.000	.000	.000
X3	10.000	.000	.000	108.000	443.000	.000	.000	.000	.000	.000
GR	444.200	.000	444.000	3.000	443.500	6.000	443.000	8.000	442.500	9.000
GR	442.000	10.000	441.500	12.500	441.000	15.500	440.500	25.000	440.500	38.000
GR	441.000	42.000	441.500	56.000	442.000	59.500	442.500	67.000	443.000	74.000
GR	443.000	108.000	442.500	114.000	442.000	116.000	441.500	117.000	441.000	118.000
GR	440.500	119.000	440.000	120.500	439.500	122.200	439.000	128.000	439.000	138.500
GR	439.000	155.000	439.000	164.500	439.000	175.500	439.000	181.000	439.000	204.000
GR	439.000	217.000	439.000	220.000	439.000	225.000	439.000	232.000	438.780	233.300
GR	438.660	241.300	437.930	245.100	436.660	249.100	435.730	252.600	435.180	257.800
GR	436.930	258.700	437.590	260.000	439.160	261.900	439.350	264.900	440.020	267.000
GR	440.030	268.500	441.000	271.000	441.500	279.000	442.000	296.000	442.500	307.500
GR	443.000	325.500	443.500	356.000	443.500	428.000	443.000	429.500	443.000	442.500
GR	443.500	444.500	443.780	452.000	.000	.000	.000	.000	.000	.000
NC	.110	.110	.070	.500	.700	.000	.000	.000	.000	.000

SECTION 6 , 220 m. D/S OLD HIGHWAY 35 BRIDGE

X1	5500.000	74.000	531.600	537.600	296.000	326.000	330.000	.000	.000	.000
X3	10.000	.000	.000	431.000	446.000	.000	.000	.000	.000	.000
GR	447.500	.000	447.500	76.000	447.000	91.000	446.500	131.000	446.000	162.000
GR	445.500	186.000	445.000	215.500	444.500	250.000	444.000	276.000	444.000	281.000
GR	444.000	288.000	443.500	291.000	443.000	304.500	442.500	313.500	442.000	314.500
GR	442.000	331.000	442.500	340.000	443.000	346.000	443.500	352.000	444.000	359.000
GR	444.500	362.500	445.000	370.000	445.000	376.000	444.500	377.500	444.500	381.000
GR	445.000	383.000	445.340	388.500	445.000	395.500	445.000	402.000	445.500	404.000
GR	446.000	408.000	446.000	431.000	445 500	451.000	445.000	457.000	444.500	462.000
GR	444.000	468.000	443.500	472.500	443.000	478.000	442.500	480.000	442.000	481.500
GR	441.500	487.000	441.000	490.500	440.500	499.000	440.600	508.000	439.370	518.000
GR	437.560	523.000	437.890	525.300	437.070	531.600	437.130	532.500	437.120	533.600
GR	437.530	535.500	438.160	536.400	439.570	537.600	439.610	540.000	439.380	549.500
GR	441.000	556.000	441.010	556.000	442.500	576.000	444.000	585.900	444.860	595.800
GR	445.100	598.000	446.000	634.500	446.500	655.800	447.000	675.000	447.000	774.000
GR	447.000	819.500	447.000	830.000	446.500	906.000	446.500	964.500	446.500	971.500
GR	446.500	989.000	447.000	992.000	447.500	994.000	447.500	1009.000	.000	.000
NC	.110	.110	.070	.500	.700	.000	.000	.000	.000	.000

SYNTHETIC X-SEC (E5) LOCATED 10 m. D/S HIGHWAY 35 BRIDGE

X1	5702.000	21.000	70.000	90.000	174.000	200.000	202.000	.000	.800	.000
GR	442.500	.000	442.000	16.000	441.500	18.000	441.000	22.000	440.500	26.000
GR	440.000	60.000	439.000	64.000	437.500	70.000	437.200	80.000	437.500	90.000
GR	439.000	92.000	440.000	94.000	440.500	95.000	441.000	108.000	441.500	118.000
GR	442.000	124.000	442.000	142.000	443.000	148.000	443.500	161.000	444.000	164.000
GR	445.000	230.000	.000	.000	.000	.000	.000	.000	.000	.000

NC	.110	.110	.070	.500	.700	.000	.000	.000	.000	.000
	SECTION 7A , IMMED D/S OLD HIGHWAY 35 BRIDGE									
X1	5712.000	16.000	11.200	27.500	10.000	10.000	10.000	.000	.000	.000
X3	10.000	.000	.000	11.300	442.410	20.400	442.390	.000	.000	.000
GR	442.580	.000	442.470	7.700	442.440	9.200	442.430	9.500	442.410	11.200
GR	439.050	11.300	438.170	13.900	437.990	15.500	437.970	19.100	438.330	20.400
GR	439.100	22.900	439.940	24.100	440.670	27.400	442.380	27.500	442.480	30.300
GR	442.650	38.000	.000	.000	.000	.000	.000	.000	.000	.000
	SECTION 7B , IMMED U/S OLD HIGHWAY 35 BRIDGE									
X1	5726.000	.000	.000	.000	14.000	14.000	14.000	.000	.000	.000
X3	10.000	.000	.000	11.200	442.410	20.400	442.390	.000	.000	.000
BT	16.000	.000	442.580	442.580	7.700	442.470	442.470	9.200	442.440	442.440
BT	9.500	442.430	442.430	11.200	442.410	442.410	11.300	442.410	441.960	13.900
BT	442.400	441.950	15.500	442.400	441.950	19.100	442.390	441.940	20.400	442.390
BT	441.940	22.900	442.390	441.940	24.100	442.380	441.930	27.400	442.380	441.930
BT	27.500	442.380	442.380	30.300	442.480	442.480	38.000	442.650	442.650	.000
NC	.110	.110	.070	.500	.700	.000	.000	.000	.000	.000
	SYNTHETIC X-SEC (E6) LOCATED 10 m. U/S OLD HIGHWAY 35 BRIDGE									
X1	5736.000	15.000	83.000	95.000	10.000	10.000	10.000	.000	.800	.000
GR	442.500	.000	442.000	22.000	441.500	75.000	441.000	77.000	440.500	78.000
GR	440.000	82.000	438.500	83.000	437.500	84.500	437.200	89.800	437.500	94.000
GR	438.500	95.000	440.000	96.000	442.000	98.000	442.500	138.000	445.000	210.000
NC	.110	.110	.070	.300	.500	.000	.000	.000	.000	.000
	SECTION 8 , 500 m. U/S OLD HIGHWAY 35 BRIDGE									
X1	6136.000	60.000	423.500	434.000	372.000	402.000	400.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	492.000	446.000	.000	.000	.000
GR	450.500	.000	450.000	38.000	449.500	84.500	449.000	134.000	448.500	173.500
GR	448.000	204.000	447.500	207.000	447.000	227.000	446.500	236.500	446.000	241.500
GR	445.500	249.500	445.000	254.500	444.500	259.000	444.000	262.500	443.500	268.000
GR	443.000	271.500	442.500	276.000	442.000	281.500	441.500	290.500	441.500	327.000
GR	442.000	342.000	442.000	352.000	441.500	358.000	441.500	387.000	441.160	405.000
GR	441.260	415.000	440.260	423.500	438.890	425.400	438.640	427.000	439.000	428.800
GR	439.140	431.400	439.750	432.900	440.560	434.000	441.390	440.900	444.040	449.000
GR	446.400	454.000	445.880	461.100	446.000	465.000	446.500	471.500	446.500	482.500
GR	446.000	485.000	446.000	492.000	446.000	520.500	445.500	541.000	445.500	590.000
GR	446.000	619.000	446.500	672.000	447.000	704.000	447.500	749.000	448.000	767.000
GR	448.000	896.000	447.500	932.000	447.000	954.500	446.500	1050.000	446.500	1058.000
GR	446.500	1092.500	446.500	1100.000	447.000	1102.000	447.500	1104.000	447.800	1109.000
NC	.110	.110	.070	.500	.700	.000	.000	.000	.000	.000
	SECTION 9 , SEWAGE TREATMENT PLANT - PUMPING STATION									
X1	6656.000	49.000	141.700	152.000	480.000	540.000	520.000	.000	.000	.000
GR	448.000	.000	447.500	7.500	447.000	14.000	446.500	18.500	446.000	22.000
GR	445.500	24.500	445.000	27.500	444.500	31.000	444.000	33.000	443.500	36.500
GR	443.000	38.500	442.500	41.500	442.500	88.000	442.210	106.000	442.210	116.000
GR	442.210	123.000	442.230	130.000	442.200	134.000	441.190	140.600	440.110	141.700
GR	439.480	142.900	439.540	144.100	439.750	147.000	439.730	148.700	440.100	150.400
GR	440.570	152.000	442.020	161.400	442.850	171.400	443.680	176.600	444.260	179.900
GR	447.480	187.600	447.500	190.000	448.000	208.500	448.500	232.000	448.500	240.500
GR	448.500	254.000	449.000	276.000	449.500	299.500	450.000	334.000	450.000	356.000

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GR   449.500   383.000   449.000   413.000   449.500   461.000   448.000   500.000   448.000   552.000
GR   448.000   590.500   447.500   702.000   447.500   760.000   447.500   764.000      .000      .000

NC      .110      .110      .070      .500      .700      .000      .000      .000      .000      .000
        SECTION 10  , ALLEY - 109 th. AVENUE
X1  7480.000    70.000   462.900   471.000   750.000   804.000   824.000      .000      .000      .000
X3    10.000      .000      .000      .000      .000   563.000   447.000      .000      .000      .000
GR    0.600      .000   450.500    18.500   450.000    37.500   449.500    53.500   449.000   124.000
GR   448.500   137.500   448.000   193.000   448.000   197.000   448.000   199.000   448.000   200.000
GR   448.000   201.000   448.000   203.000   448.000   204.000   448.000   206.500   448.000   208.500
GR   448.000   211.000   448.000   212.500   448.000   253.000   448.000   256.000   448.000   257.000
GR   448.000   258.500   448.000   260.000   448.000   262.500   448.000   263.500   448.000   266.500
GR   447.500   267.000   447.500   270.000   448.000   272.000   448.000   283.000   447.500   284.000
GR   447.000   285.000   446.000   286.000   445.000   286.500   444.500   288.000   444.000   290.500
GR   443.500   291.500   443.000   293.000   442.500   380.000   442.500   388.500   442.500   453.000
GR   442.600   455.000   441.820   460.600   442.330   462.900   441.390   464.900   440.940   465.700
GR   440.610   467.000   440.430   468.400   441.290   469.400   442.250   471.000   443.460   473.100
GR   443.840   476.000   444.730   479.300   444.790   480.900   445.000   509.500   445.500   512.500
GR   446.000   516.000   446.500   527.000   447.000   551.500   447.000   563.000   446.500   565.000
GR   446.000   568.000   446.500   574.000   446.500   576.000   447.000   578.500   447.500   590.000
GR   447.500   600.000   447.800   612.500   448.000   678.500   448.500   747.500   448.900   813.500

NC      .110      .110      .070      .300      .500      .000      .000      .000      .000      .000
        SECTION 11  , 150 m. D/S GOLF COURSE BRIDGE
X1  8224.000    47.000   659.400   672.600   636.000   610.000   744.000      .000      .000      .000
GR   450.000      .000   449.500    82.000   449.500   162.000   449.000   250.000   448.500   357.000
GR   448.500   381.000   448.500   391.000   448.000   480.000   448.070   491.000   448.000   569.500
GR   447.750   592.000   447.000   613.000   446.500   622.500   446.000   629.000   445.500   638.500
GR   445.000   643.000   445.240   655.900   444.430   659.400   442.370   661.200   440.990   663.900
GR   440.980   665.700   441.240   668.200   442.440   670.800   443.240   672.600   443.640   675.200
GR   444.000   678.000   444.000   707.000   444.000   720.000   444.000   743.000   444.000   779.000
GR   444.000   785.000   444.000   813.000   444.000   815.000   444.000   819.000   444.500   825.500
GR   445.000   831.500   445.000   857.000   445.000   864.000   445.000   870.000   445.000   875.500
GR   445.500   893.000   446.000   896.500   446.500   907.000   447.000   921.000   447.500   959.000
GR   447.500   994.500   447.500   998.400      .000      .000      .000      .000      .000      .000

NC      .110      .110      .070      .300      .500      .000      .000      .000      .000      .000
        SYNTHETIC X-SEC (E7) LOCATED 10 m. D/S GOLF COURSE BRIDGE
X1  8462.000    19.000   173.000   188.000   180.000   232.000   238.000      .000      .000      .000
GR   447.500      .000   447.000    70.000   446.500    88.000   446.000    98.000   445.500   106.000
GR   445.000   111.000   444.500   125.000   444.000   173.000   443.500   174.000   443.000   175.000
GR   442.500   176.000   441.000   180.000   442.500   184.000   443.000   185.000   443.500   186.000
GR   444.000   188.000   444.500   246.000   445.000   310.000   447.500   360.000      .000      .000

NC      .073      .073      .073      .500      .700      .000      .000      .000      .000      .000
        SECTION 12A , IMMED D/S GOLF COURSE BRIDGE - 105 th. AVENUE
X1  8472.000    24.000   162.800   180.600    10.000    10.000    10.000      .000      .000      .000
X3    10.000   441.300      .000   167.100   445.120   174.800   445.130      .000      .000      .000
GR   447.550      .000   444.920   156.400   445.000   159.400   445.070   162.800   443.640   162.900
GR   444.070   165.400   442.190   167.100   444.600   167.110   444.600   167.400   442.190   167.410
GR   440.930   170.300   440.920   174.800   444.610   174.810   444.610   175.100   440.920   175.110
GR   441.700   178.000   442.720   179.100   443.210   180.500   445.110   180.600   445.050   182.600
GR   444.860   189.600   445.000   265.600   447.500   375.600   448.000   391.600      .000      .000
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SECTION 12B , IMMED U/S GOLF COURSE BRIDGE - 105 th. AVENUE

X1	8484.000	.000	.000	.000	12.000	12.000	12.000	.000	.000	.000
X3	10.000	441.400	.000	170.300	445.130	174.800	445.130	.000	.000	.000
BT	24.000	.000	447.500	447.500	156.400	444.920	444.920	159.400	445.000	445.000
BT	162.800	445.070	445.070	162.900	445.070	444.550	165.400	445.110	444.590	167.100
BT	445.120	444.600	167.110	445.120	444.600	167.400	445.120	444.600	167.410	445.120
BT	444.600	170.300	445.130	444.610	174.800	445.130	444.610	174.810	445.130	444.610
BT	175.100	445.130	444.610	175.110	445.130	444.610	178.000	445.110	444.600	179.100
BT	445.110	444.600	180.500	445.110	444.600	180.600	445.110	444.600	182.600	445.050
BT	445.050	189.600	444.860	444.860	265.600	445.000	445.000	375.600	447.500	447.500
BT	375.600	448.000	448.000	.000	.000	.000	.000	.000	.000	.000
NC	.150	.110	.073	.500	.700	.000	.000	.000	.000	.000

SYNTHETIC X-SEC (EB) LOCATED 10 m. U/S GOLF COURSE BRIDGE

X1	8494.000	27.000	184.000	205.000	10.000	10.000	10.000	.000	.000	.000
GR	447.500	.000	445.500	30.000	445.000	36.000	444.500	78.000	444.000	97.000
GR	444.000	122.000	444.000	131.000	444.000	164.000	443.500	174.000	443.500	184.000
GR	443.500	187.000	443.000	187.500	442.500	190.000	441.000	193.500	442.500	197.000
GR	443.000	199.000	443.500	202.000	443.500	205.000	443.500	210.000	444.000	301.000
GR	444.500	305.000	445.000	308.000	445.500	314.000	446.000	322.000	446.500	340.000
GR	447.000	348.000	447.500	354.000	.000	.000	.000	.000	.000	.000
NC	.150	.110	.073	.500	.700	.000	.000	.000	.000	.000

SECTION 12C , 138 m. U/S GOLF COURSE BRIDGE - 105 th. AVENUE

X1	8622.000	60.000	386.000	394.800	115.000	110.000	128.000	.000	.000	.000
GR	447.500	.000	447.000	5.500	446.500	10.000	446.000	15.000	445.500	17.500
GR	445.000	21.000	444.500	22.000	444.500	47.500	444.500	107.000	444.500	108.000
GR	444.500	116.000	444.500	118.000	444.500	121.000	444.500	179.000	444.500	226.000
GR	444.500	265.500	444.500	267.000	444.500	267.500	444.500	269.000	444.500	273.000
GR	444.500	274.500	444.500	277.000	444.500	295.500	444.500	326.000	444.500	337.000
GR	444.500	351.000	444.000	352.500	443.500	354.500	443.500	355.500	443.500	358.500
GR	443.500	359.500	443.500	361.000	443.500	362.500	444.000	363.500	444.000	384.000
GR	443.500	386.000	443.000	387.500	442.500	389.000	442.190	390.500	441.550	392.000
GR	441.860	393.000	442.500	394.000	443.000	394.800	443.500	396.000	444.500	397.000
GR	445.000	398.000	445.500	400.000	446.000	410.000	446.500	426.000	447.000	442.000
GR	447.500	454.000	448.500	526.000	449.000	578.000	449.500	625.000	449.600	700.500
GR	449.500	709.000	449.200	817.000	449.200	875.000	449.300	956.500	449.300	1049.500
NC	.150	.110	.073	.500	.700	.000	.000	.000	.000	.000

SECTION 13 , 103 rd. AVENUE AT RCMP STATION

X1	8922.000	45.000	424.700	440.000	309.000	296.000	300.000	.000	.000	.000
GR	449.000	.000	449.000	15.500	448.500	59.000	448.000	68.000	447.500	76.000
GR	447.000	84.500	446.500	95.500	446.000	102.500	445.500	127.000	445.500	142.000
GR	445.000	171.000	445.000	175.000	445.000	283.500	444.500	287.000	444.500	292.000
GR	444.500	300.000	444.500	309.000	444.500	397.000	444.360	412.000	444.710	421.900
GR	444.010	424.700	443.770	428.000	442.190	430.500	441.590	432.000	441.860	433.500
GR	443.270	435.100	444.530	437.200	445.970	440.000	446.660	449.700	446.730	455.000
GR	447.000	458.000	447.500	472.500	448.000	497.000	448.500	520.000	449.000	536.500
GR	449.500	552.000	449.600	558.500	449.500	650.500	449.400	684.000	449.200	778.500
GR	449.300	859.000	449.500	883.500	449.600	915.000	449.700	973.500	449.800	1033.500

NC	.150	.110	.073	.500	.700	.000	.000	.000	.000	.000
	SECTION 14 , 120 m. D/S CNR BRIDGE									
X1	9198.000	51.000	384.000	400.700	266.000	268.000	276.000	.000	.000	.000
X3	10.000	.000	.000	123.500	449.000	.000	.000	.000	.000	.000
GR	449.500	.000	449.000	2.000	448.500	35.500	448.500	45.500	448.500	53.000
GR	448.000	59.000	447.500	67.000	447.000	73.000	446.500	79.500	446.500	81.500
GR	447.000	92.000	447.500	97.000	448.000	106.000	448.500	112.500	449.000	123.500
GR	449.000	236.000	448.500	250.000	448.000	259.000	447.500	263.000	447.000	269.000
GR	446.500	276.500	446.000	279.500	445.500	283.000	445.000	331.000	445.000	340.000
GR	445.000	349.000	444.900	384.000	444.330	385.900	443.630	387.300	443.280	388.200
GR	442.730	389.600	442.480	391.800	442.500	394.400	443.450	396.100	445.260	398.300
GR	446.060	400.700	448.810	406.000	449.450	410.700	449.570	412.700	449.700	444.000
GR	449.500	480.000	449.400	498.000	449.200	560.500	449.500	626.000	449.700	669.000
GR	450.000	713.000	450.500	785.000	451.000	842.000	451.000	859.000	451.500	883.000
GR	451.900	958.000	.000	.000	.000	.000	.000	.000	.000	.000
NC	.150	.110	.073	.500	.700	.000	.000	.000	.000	.000
	SYNTHETIC X-SEC (E9) LOCATED 8 m. D/S CNR BRIDGE									
X1	9308.000	31.000	354.000	371.000	96.000	114.000	108.000	.000	.000	.000
GR	450.000	.000	449.500	4.000	449.000	6.000	448.500	15.000	448.000	22.000
GR	447.500	44.000	447.500	92.000	447.500	218.000	447.580	234.000	447.000	255.000
GR	446.500	266.000	446.000	292.000	445.500	352.000	445.000	354.000	444.500	354.500
GR	444.000	356.000	443.500	359.000	442.500	360.000	442.500	362.000	442.500	364.000
GR	442.500	366.000	445.000	371.000	446.000	372.000	446.500	374.000	447.000	376.000
GR	447.500	377.000	448.000	378.000	448.500	378.500	449.000	380.000	449.500	381.000
GR	450.000	460.000	.000	.000	.000	.000	.000	.000	.000	.000
NC	.150	.110	.075	.500	.700	.000	.000	.000	.000	.000
	SECTION 15A , IMMED D/S CNR BRIDGE									
X1	9316.000	24.000	5.400	53.100	10.000	10.000	10.000	.000	.000	.000
X3	10.000	.000	.000	22.200	450.380	39.700	450.410	.000	.000	.000
GR	450.340	.000	450.350	5.000	449.690	5.400	449.230	5.500	448.230	11.600
GR	445.060	17.300	443.780	19.400	443.450	22.200	442.830	25.800	449.720	25.810
GR	449.720	31.500	442.830	31.510	442.870	32.500	443.770	34.200	444.230	36.800
GR	444.330	38.000	443.900	39.700	444.110	42.300	445.380	45.800	447.770	49.300
GR	449.050	52.900	449.770	53.100	450.430	53.200	450.440	60.000	.000	.000
	SECTION 15B , IMMED U/S CNR BRIDGE									
X1	9324.000	.000	.000	.000	8.000	8.000	8.000	.000	.000	.000
X3	10.000	.000	.000	22.200	450.380	39.700	450.410	.000	.000	.000
BT	21.000	.000	450.340	450.340	5.000	450.350	450.350	5.400	450.350	449.690
BT	5.500	450.350	449.690	11.600	450.360	449.700	17.300	450.370	449.710	19.400
BT	450.370	449.710	22.200	450.380	449.720	25.800	450.380	449.720	32.500	450.390
BT	449.730	34.200	450.400	449.740	36.800	450.400	449.740	38.000	450.400	449.740
BT	39.700	450.410	449.750	42.300	450.410	449.750	45.800	450.420	449.760	49.300
BT	450.420	449.760	52.900	450.430	449.770	53.100	450.430	449.770	53.200	450.430
BT	450.430	60.000	450.440	450.440	.000	.000	.000	.000	.000	.000

NC	.150	.150	.075	.300	.500	.000	.000	.000	.000	.000
	SYNTHETIC X-SEC (E10) LOCATED 12 m. U/S CNR BRIDGE									
X1	9336.000	30.000	343.000	360.000	10.000	10.000	10.000	.000	.000	.000
GR	450.000	.000	449.500	4.500	449.000	6.000	448.500	12.000	448.000	19.000
GR	447.500	60.000	447.500	249.000	447.000	252.000	446.500	259.000	446.000	268.000
GR	445.500	315.000	445.000	340.000	444.000	343.000	443.500	346.000	443.000	346.500
GR	442.500	348.000	442.500	350.000	442.500	355.000	442.500	360.000	445.000	366.000
GR	445.500	368.000	446.000	385.000	446.500	399.000	447.000	406.000	447.500	411.000
GR	448.000	418.000	448.500	423.000	449.000	436.000	449.500	474.000	450.000	510.000
NC	.150	.150	.075	.300	.500	.000	.000	.000	.000	.000
	SECTION 16 , 300 m. U/S CNR BRIDGE									
X1	9520.000	57.000	365.000	375.000	276.000	270.000	280.000	.000	.000	.000
X3	10.000	.000	.000	216.000	450.000	.000	.000	.000	.000	.000
GR	449.100	.000	449.000	4.000	448.500	5.500	448.000	7.000	448.000	16.000
GR	448.500	42.000	449.000	55.000	449.500	82.000	450.000	140.500	450.400	191.500
GR	450.000	216.000	449.500	221.000	449.000	228.000	448.500	237.000	448.000	240.000
GR	447.500	243.000	447.000	245.000	446.500	248.000	446.000	249.500	446.000	273.000
GR	446.000	285.000	445.500	289.000	445.500	311.000	445.500	320.000	445.270	358.000
GR	445.020	362.800	444.670	365.000	443.380	367.100	443.410	368.000	443.340	369.400
GR	443.190	371.300	443.280	373.700	444.090	374.500	444.510	375.000	445.810	378.200
GR	446.500	384.200	447.600	394.200	448.480	404.200	448.600	406.700	449.000	413.000
GR	449.500	429.000	450.000	457.000	450.000	509.000	450.000	513.500	450.000	522.000
GR	449.500	523.000	449.500	527.000	450.000	531.000	450.500	633.500	451.000	646.000
GR	451.500	655.000	452.000	801.000	452.500	809.500	453.000	816.000	453.000	861.500
GR	453.000	884.000	453.100	891.000	.000	.000	.000	.000	.000	.000
NC	.150	.150	.075	.500	.700	.000	.000	.000	.000	.000
	SECTION 17A , 200 m. D/S WALKING BRIDGE									
X1	9998.000	35.000	208.500	218.000	708.000	645.000	717.000	.000	.000	.000
GR	451.050	.000	450.500	20.000	450.000	70.000	449.500	151.000	449.000	157.000
GR	449.000	160.000	448.000	163.000	447.500	165.000	447.000	166.000	446.500	168.000
GR	446.000	169.000	445.500	206.000	445.000	207.500	444.000	208.500	443.000	210.000
GR	442.500	211.000	442.500	213.300	442.500	215.500	443.000	216.000	444.000	218.000
GR	445.000	219.000	445.500	221.000	446.000	222.500	446.500	236.000	446.500	294.000
GR	447.000	305.000	447.000	328.000	447.500	333.000	448.000	336.000	448.500	339.000
GR	449.000	346.000	449.500	347.000	450.000	352.000	450.000	404.000	450.400	430.000
NC	.150	.150	.075	.500	.700	.000	.000	.000	.000	.000
	SYNTHETIC X-SEC (E11) LOCATED 18 m. D/S WALKING BRIDGE									
X1	10180.000	30.000	183.000	190.000	275.000	275.000	285.000	.000	.000	.000
GR	451.100	.000	450.500	6.000	450.000	111.000	449.500	122.000	449.000	135.500
GR	448.500	136.000	448.000	138.000	447.500	140.000	447.000	141.000	446.500	142.000
GR	446.000	145.000	445.500	178.000	445.000	179.000	442.500	183.000	442.500	185.000
GR	442.500	187.000	442.500	190.000	445.000	193.000	445.500	194.000	446.000	195.000
GR	446.000	231.000	446.500	304.000	447.000	322.000	447.500	326.000	448.000	327.000
GR	448.500	328.000	449.000	350.000	449.500	381.000	450.000	383.000	450.400	418.000

NC	.150	.150	.075	.300	.500	.000	.000	.000	.000	.000
	SECTION 17B , IMMED D/S WALKING BRIDGE									
X1	10198.000	19.000	111.200	126.700	10.000	10.000	10.000	.000	.000	.000
X3	10.000	.000	.000	111.200	448.160	126.600	448.010	.000	.000	.000
GR	450.000	.000	448.200	99.300	448.100	106.300	448.150	110.100	448.160	111.200
GR	447.700	111.300	445.460	111.400	444.570	114.000	443.730	115.200	443.470	116.600
GR	443.220	118.700	443.260	121.100	443.190	123.200	444.540	125.900	444.900	126.600
GR	448.010	126.700	448.010	126.800	449.000	296.800	450.000	334.000	.000	.000
	SECTION 17C , IMMED U/S WALKING BRIDGE									
X1	10204.000	.000	.000	.000	6.000	6.000	6.000	.000	.000	.000
X3	10.000	.000	.000	114.400	448.140	122.500	448.060	.000	.000	.000
BT	19.000	.000	450.000	450.000	99.300	448.200	448.200	106.300	448.100	448.100
BT	110.100	448.150	448.150	111.200	448.160	448.160	111.300	448.160	448.160	111.400
BT	448.160	447.770	114.000	448.140	447.750	115.200	448.120	447.730	116.600	448.110
BT	447.720	118.700	448.100	447.710	121.100	448.080	447.690	123.200	448.060	447.670
BT	125.900	448.030	447.640	126.600	448.010	447.620	126.700	448.010	448.010	126.800
BT	448.010	448.010	296.800	449.000	449.000	334.000	450.000	450.000	.000	.000
NC	.110	.110	.070	.300	.500	.000	.000	.000	.000	.000
	SYNTHETIC X-SEC (E12) LOCATED 10 m. U/S WALKING BRIDGE									
X1	10214.000	25.000	178.000	222.000	10.000	10.000	10.000	.000	.000	.000
GR	450.700	.000	450.500	22.000	450.000	40.000	449.500	71.000	449.000	96.000
GR	448.500	119.000	448.000	138.000	447.500	149.000	447.000	156.000	446.500	158.000
GR	446.000	166.000	445.500	175.000	445.000	178.000	442.500	185.000	442.500	194.000
GR	442.500	200.000	446.500	222.000	446.500	301.000	447.000	311.000	447.500	313.000
GR	448.000	333.000	448.500	342.000	449.000	356.000	449.500	371.000	450.000	400.000
NC	.110	.110	.070	.100	.300	.000	.000	.000	.000	.000
	SECTION 17D , 289 m. U/S WALKING BRIDGE									
X1	10493.000	38.000	282.500	297.000	270.000	230.000	279.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	297.000	447.000	.000	.000	.000
GR	451.000	.000	450.500	8.000	450.000	10.000	449.500	12.000	449.000	14.000
GR	448.500	15.000	448.000	17.500	447.500	19.500	447.500	21.000	447.500	24.000
GR	447.500	26.000	447.500	29.000	447.500	37.000	447.500	85.000	447.500	91.000
GR	447.500	94.500	447.500	98.500	446.500	129.000	446.000	204.500	446.000	208.000
GR	445.500	282.000	445.000	282.500	444.500	285.000	444.000	286.500	443.500	289.000
GR	444.000	291.000	444.500	293.500	445.000	297.000	445.500	299.500	446.000	318.000
GR	446.500	336.000	447.500	346.000	448.000	351.000	448.500	362.000	449.000	380.000
GR	449.500	389.000	450.000	414.000	450.400	460.500	.000	.000	.000	.000
NC	.110	.110	.070	.100	.300	.000	.000	.000	.000	.000
	SECTION 17E , 54 m. D/S HIGHWAY 3 BRIDGE									
X1	10707.000	44.000	328.500	345.000	210.000	186.000	214.000	.000	.000	.000
GR	451.000	.000	450.500	8.000	450.000	10.500	449.500	12.000	449.000	13.000
GR	448.500	15.000	448.000	16.000	447.500	17.500	447.500	19.000	447.500	20.500
GR	447.500	21.500	447.500	23.000	447.500	25.000	447.500	92.000	447.500	112.000
GR	446.500	126.000	446.500	142.000	446.500	148.000	446.500	153.000	446.500	162.500
GR	446.500	174.000	446.500	183.000	446.500	220.000	446.000	248.500	446.000	255.000
GR	446.000	292.000	446.000	304.000	446.000	328.500	445.500	330.000	445.000	338.000
GR	444.500	339.500	444.500	342.000	445.000	344.000	446.000	345.000	446.500	346.500
GR	447.000	348.000	447.500	350.000	448.000	351.000	448.500	351.500	449.000	352.500
GR	449.500	353.500	450.000	401.000	450.000	407.500	450.000	410.000	.000	.000

NC	.070	.070	.070	.100	.300	.000	.000	.000	.000	.000
	SYNTHETIC X-SEC (E13) LOCATED 25 m. D/S HIGHWAY 3 BRIDGE									
X1	10736.000	32.000	328.000	348.000	30.000	44.000	44.000	.000	.000	.000
GR	451.500	.000	451.000	4.000	450.500	12.000	450.000	14.000	449.500	17.000
GR	449.000	20.000	448.500	22.000	448.000	24.000	447.500	28.000	447.000	34.000
GR	446.500	38.000	446.500	84.000	446.000	91.000	446.000	126.000	446.000	256.000
GR	446.000	322.000	445.500	324.000	445.000	328.000	444.500	333.000	443.500	336.000
GR	444.200	337.000	444.200	338.500	444.200	340.000	444.200	342.000	444.200	344.000
GR	445.000	346.000	447.500	348.000	448.000	350.000	448.500	352.000	449.000	354.000
GR	449.500	357.000	450.000	391.000	.000	.000	.000	.000	.000	.000
NC	.070	.070	.070	.300	.500	.000	.000	.000	.000	.000
	SECTION 18A , IMMED D/S HIGHWAY 3 BRIDGE									
X1	10761.000	20.000	191.600	213.400	10.000	10.000	10.000	.000	.000	.000
X3	10.000	.000	.000	193.000	449.500	213.300	449.400	.000	.000	.000
GR	449.500	.000	449.170	190.500	449.190	191.600	445.620	191.700	444.900	195.400
GR	444.200	197.900	448.740	197.910	448.740	198.200	444.200	198.210	444.150	200.500
GR	444.190	202.500	444.580	204.700	448.810	204.710	448.810	205.000	444.580	205.010
GR	446.490	208.100	447.830	213.300	449.400	213.400	449.420	214.400	449.510	221.700
	SECTION 18B , IMMED U/S HIGHWAY 3 BRIDGE									
X1	10778.000	.000	.000	.000	17.000	17.000	17.000	.000	.000	.000
X3	10.000	.000	.000	193.000	449.500	213.300	449.400	.000	.000	.000
BT	20.000	.000	449.500	449.500	190.500	449.170	449.170	191.600	449.190	449.190
BT	191.700	449.190	448.690	195.400	449.220	448.720	197.900	449.240	448.740	197.910
BT	449.240	448.740	198.200	449.240	448.740	198.210	449.240	448.740	200.500	449.270
BT	448.770	202.500	449.300	448.800	204.700	449.310	448.810	204.710	449.310	448.810
BT	205.000	449.310	448.810	205.010	449.310	448.810	208.100	449.350	448.850	213.300
BT	449.400	448.900	213.400	449.400	449.400	214.400	449.420	449.420	221.700	449.510
BT	449.510	.000	.000	.000	.000	.000	.000	.000	.000	.000
NC	.070	.070	.070	.300	.500	.000	.000	.000	.000	.000
	SYNTHETIC X-SEC (E14) LOCATED 20 m. U/S HIGHWAY 3 BRIDGE									
X1	10798.000	28.000	376.000	391.000	10.000	10.000	10.000	.000	.000	.000
GR	451.500	.000	451.000	44.000	450.500	45.000	450.000	50.000	449.500	59.000
GR	449.000	76.000	448.500	112.000	448.000	114.000	447.500	116.000	447.000	118.000
GR	446.500	156.000	446.000	170.000	446.000	320.000	446.000	356.000	446.000	374.000
GR	445.500	376.000	445.000	378.000	444.500	378.500	444.200	380.500	444.200	385.000
GR	444.200	388.000	445.000	391.000	447.500	396.000	448.000	404.000	448.500	410.000
GR	449.000	419.000	449.500	456.000	450.000	475.000	.000	.000	.000	.000
NC	.070	.070	.070	.300	.500	.000	.000	.000	.000	.000
	SECTION 19 , 300 m. U/S HIGHWAY 3 BRIDGE									
X1	11084.000	43.000	335.000	352.500	276.000	316.000	296.000	.000	.000	.000
GR	453.000	.000	452.500	59.000	452.000	114.000	451.500	144.000	451.000	173.000
GR	450.500	201.000	450.000	229.500	449.500	231.000	449.000	232.000	448.500	233.500
GR	448.000	236.000	447.500	237.500	447.000	244.000	446.500	253.500	446.500	295.000
GR	446.500	335.000	445.720	337.000	445.030	339.000	444.240	339.700	443.760	341.600
GR	444.070	343.400	444.200	344.800	444.700	346.600	445.700	349.800	446.400	352.500
GR	446.500	417.000	446.500	428.000	447.000	455.000	447.500	482.000	448.000	495.000
GR	448.500	522.000	448.500	540.000	448.000	550.000	448.500	560.000	449.000	563.000
GR	449.000	612.000	448.500	631.000	448.500	636.000	449.000	680.000	449.000	706.500
GR	449.000	742.000	449.500	755.000	450.000	783.000	.000	.000	.000	.000

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NC	.110	.110	.070	.100	.300	.000	.000	.000	.000	.000
	SECTION 20 , 1300 m. FROM U/S END OF STUDY AREA									
X1	14086.000	58.000	422.000	432.900	2810.000	2744.000	3002.000	.000	.000	.000
GR	451.000	.000	450.500	25.500	450.000	33.400	449.500	41.000	449.000	45.000
GR	448.500	53.500	448.500	93.000	449.000	98.000	449.500	103.000	450.000	110.000
GR	450.500	116.000	451.000	121.500	451.500	129.000	452.000	138.500	452.500	146.000
GR	453.000	172.000	453.000	366.000	452.500	380.500	452.000	388.000	451.500	394.500
GR	451.000	398.500	450.500	404.500	450.000	407.000	449.500	410.000	448.510	412.000
GR	447.560	422.000	446.770	423.300	446.350	424.000	445.900	425.100	445.690	426.200
GR	445.630	427.200	445.670	428.300	446.250	430.000	447.250	431.300	447.450	431.900
GR	447.760	432.900	448.420	440.300	448.700	450.000	448.500	574.000	448.500	577.500
GR	448.500	586.500	448.500	598.000	448.500	631.500	449.000	637.500	449.000	643.500
GR	450.000	646.500	450.500	656.000	451.000	657.500	451.500	661.500	452.000	668.500
GR	452.500	677.500	453.000	690.000	453.500	718.000	454.000	742.000	454.000	786.000
GR	454.000	816.000	454.500	879.000	455.000	984.000	.000	.000	.000	.000

NC	.110	.110	.070	.100	.300	.000	.000	.000	.000	.000
	SECTION 21 , MOST UPSTREAM CROSS SECTION									
X1	15286.000	51.000	218.800	229.900	1064.000	866.000	1200.000	.000	.000	.000
GR	454.500	.000	454.000	2.000	453.500	4.000	453.000	5.500	452.500	9.000
GR	452.000	11.000	450.500	13.500	450.000	15.000	449.500	17.000	449.000	20.000
GR	449.000	61.000	449.000	105.000	449.000	116.000	449.000	129.000	449.000	135.000
GR	449.000	167.000	449.000	176.000	449.000	202.000	449.480	206.500	448.780	215.700
GR	447.950	218.800	447.520	222.400	446.380	223.500	446.300	224.600	446.560	225.600
GR	447.950	226.500	448.300	228.200	449.070	229.900	448.980	235.400	449.000	241.900
GR	449.530	248.500	449.500	280.000	449.500	287.000	449.500	291.500	449.500	308.000
GR	449.500	317.000	449.500	326.000	449.500	329.000	450.000	331.000	450.500	334.500
GR	451.000	337.000	451.500	340.000	452.000	346.000	452.000	360.000	452.000	380.000
GR	452.500	390.000	453.000	399.000	453.500	407.000	454.000	414.500	454.500	423.500
GR	455.000	441.000	.000	.000	.000	.000	.000	.000	.000	.000
EJ	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

THIS RUN EXECUTED 11-30-88

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HEC2 RELEASE DATED NOV 76 UPDATED MAY 1984
ERROR CORR - 01,02,03,04,05,06
MODIFICATION - 50,51,52,53,54,55,56
IBM-PC-XT VERSION AUGUST 1985
****

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

ALT. BRIDGE SIM. TECHNIQ

SUMMARY PRINTOUT

SECNO	EG	CWSEL	CRIWS	K*XNL	K*XNCH	K*XNR	QLOB	QCH	QROB
1960.000	434.63	434.59	433.00	110.00	60.50	110.00	.17	21.61	.42
3000.000	436.07	436.01	434.69	110.00	60.50	110.00	.99	20.34	.88
3880.000	437.13	437.10	435.54	110.00	60.50	110.00	1.98	15.00	5.22
4400.000	437.85	437.79	436.83	110.00	60.50	110.00	.00	20.47	1.73
4468.000	437.94	437.93	436.52	70.00	60.50	70.00	3.88	16.17	2.15
4478.000	437.96	437.93	436.24	110.00	60.50	110.00	.00	22.20	.00
4494.000	438.25	437.95	437.14	110.00	60.50	110.00	.00	22.20	.00
4504.000	438.40	438.40	436.48	70.00	77.00	70.00	7.36	13.27	1.57
4628.000	438.46	438.45	437.01	70.00	77.00	70.00	1.74	8.35	12.11
4638.000	438.50	438.44	437.22	70.00	77.00	70.00	1.06	20.39	.75
4676.000	438.53	438.53	435.98	70.00	77.00	70.00	1.93	6.64	13.63
4686.000	438.78	438.42	437.93	70.00	77.00	70.00	.00	22.20	.00
4700.000	439.87	439.56	438.29	70.00	77.00	70.00	.00	22.20	.00
4740.000	440.03	440.03	436.79	110.00	77.00	110.00	6.65	3.30	12.26
4800.000	440.03	440.03	436.79	110.00	77.00	110.00	5.28	2.62	14.31
5170.000	440.03	440.03	436.58	110.00	77.00	110.00	9.47	12.32	.42
5500.000	440.08	440.07	438.17	110.00	77.00	110.00	12.61	8.38	1.21

SECNO	EG	CVSEL	CRIVS	K*XNL	K*XNCH	K*XNR	QLOB	QCN	QROB
5702.000	440.21	440.19	438.66	110.00	77.00	110.00	1.60	20.13	.47
5712.000	440.26	440.19	439.05	110.00	77.00	110.00	.00	22.20	.00
5726.000	440.34	440.27	439.05	110.00	77.00	110.00	.00	22.20	.00
5736.000	440.38	440.34	438.96	110.00	77.00	110.00	.06	22.07	.06
6136.000	441.28	441.23	439.94	110.00	77.00	110.00	1.15	20.63	.41
6656.000	442.18	442.15	440.59	110.00	77.00	110.00	1.12	18.82	2.26
7480.000	443.07	443.06	442.08	110.00	77.00	110.00	13.56	8.56	.08
8224.000	443.98	443.94	442.23	110.00	77.00	110.00	.00	21.86	.34
8462.000	444.37	444.34	442.69	110.00	77.00	110.00	.62	20.84	.74
8472.000	444.41	444.36	442.44	73.00	80.30	73.00	.00	22.20	.00
8484.000	444.56	444.42	442.75	73.00	80.30	73.00	.00	22.20	.00
8494.000	444.63	444.63	442.81	150.00	80.30	110.00	4.41	9.02	8.77
8622.000	444.68	444.66	443.29	150.00	80.30	110.00	8.78	12.72	.71
8922.000	444.99	444.98	443.34	150.00	80.30	110.00	8.77	13.43	.00
9198.000	445.34	445.32	443.66	150.00	80.30	110.00	2.76	19.44	.00
9308.000	445.47	445.45	443.52	150.00	80.30	110.00	.03	22.16	.01
9316.000	445.51	445.46	444.28	150.00	82.50	110.00	.00	22.20	.00
9324.000	445.56	445.52	444.28	150.00	82.50	110.00	.00	22.20	.00
9336.000	445.58	445.58	443.17	150.00	82.50	150.00	.82	19.57	1.81
9520.000	445.76	445.73	444.28	150.00	82.50	150.00	3.71	18.13	.36
9998.000	446.36	446.35	443.67	150.00	82.50	150.00	2.84	18.55	.81
10180.000	446.47	446.46	443.48	150.00	82.50	150.00	4.42	14.32	3.46
10198.000	446.47	446.46	444.20	150.00	82.50	150.00	.00	22.20	.00
10204.000	446.49	446.45	444.31	150.00	82.50	150.00	.00	22.20	.00
10214.000	446.51	446.51	443.07	110.00	77.00	110.00	.67	21.53	.00
10493.000	446.54	446.53	444.90	110.00	77.00	110.00	10.02	12.18	.00

SECNO	EG	CWSEL	CRIWS	K*XNL	K*XNCH	K*XNR	QLOB	QCH	QROB
10707.000	446.64	446.63	445.62	110.00	77.00	110.00	10.93	11.20	.07
10736.000	446.64	446.64	444.85	70.00	77.00	70.00	14.69	7.51	.00
10761.000	446.66	446.63	445.19	70.00	77.00	70.00	.00	22.20	.00
10778.000	446.72	446.69	445.19	70.00	77.00	70.00	.00	22.20	.00
10798.000	446.73	446.73	445.00	70.00	77.00	70.00	15.54	6.36	.31
11084.000	446.78	446.77	445.14	70.00	77.00	70.00	3.54	14.38	4.29
14086.000	448.78	448.77	446.97	110.00	77.00	110.00	2.64	15.18	4.38
15286.000	449.48	449.47	448.17	110.00	77.00	110.00	12.35	9.02	.83

ALT. BRIDGE SIM. TECHNIQ

SUMMARY PRINTOUT

SECNO	Q	QWEIR	QPR	SSTA	ENDST	DEPTH	STCHL	STCHR
1960.000	22.20	.00	.00	41.33	59.47	2.69	44.10	55.40
3000.000	22.20	.00	.00	498.70	537.00	2.75	523.50	531.40
3880.000	22.20	.00	.00	257.78	429.00	3.00	325.40	331.60
4400.000	22.20	.00	.00	35.30	49.36	2.34	35.30	45.70
4468.000	22.20	.00	.00	150.01	367.02	2.93	278.00	294.00
4478.000	22.20	.00	.00	5.10	19.70	2.53	1.20	31.40
4494.000	22.20	.00	.00	8.50	12.60	2.25	1.20	31.40
4504.000	22.20	.00	.00	5.56	137.42	3.40	113.00	125.00
4628.000	22.20	.00	.00	112.27	185.31	2.55	125.50	134.60
4638.000	22.20	.00	.00	120.81	143.25	2.54	129.50	139.50
4676.000	22.20	.00	.00	129.17	244.10	3.53	154.00	164.00
4686.000	22.20	.00	.00	83.90	88.80	1.82	78.90	96.70
4700.000	22.20	.00	.00	85.30	88.80	2.96	78.90	96.70
4740.000	22.20	.00	.00	13.88	406.37	4.85	120.00	127.50
4800.000	22.20	.00	.00	13.87	406.39	4.85	120.00	127.50
5170.000	22.20	.00	.00	120.42	267.94	4.85	245.10	260.00
5500.000	22.20	.00	.00	512.31	552.27	3.00	531.60	537.60
5702.000	22.20	.00	.00	62.42	92.79	2.19	70.00	90.00
5712.000	22.20	.00	.00	11.30	20.40	2.22	11.20	27.50
5726.000	22.20	.00	.00	11.26	20.40	2.30	11.20	27.50
5736.000	22.20	.00	.00	82.31	95.69	2.34	83.00	95.00
6136.000	22.20	.00	.00	401.26	439.57	2.59	423.50	434.00
6656.000	22.20	.00	.00	134.37	162.90	2.67	141.70	152.00
7480.000	22.20	.00	.00	292.82	472.41	2.65	462.90	471.00

SECNO	Q	QWEIR	QPR	SSTA	ENDST	DEPTH	STCHL	STCHR
8224.000	22.20	.00	.00	659.83	677.55	2.96	659.40	672.60
8462.000	22.20	.00	.00	140.47	227.31	3.34	173.00	188.00
8472.000	22.20	.00	.00	167.10	174.80	3.06	162.80	180.60
8484.000	22.20	.00	.00	170.30	174.80	3.02	162.80	180.60
8494.000	22.20	.00	.00	67.37	305.76	3.63	184.00	205.00
8622.000	22.20	.00	.00	21.67	397.33	3.11	386.00	394.80
8922.000	22.20	.00	.00	283.68	438.06	3.39	424.70	440.00
9198.000	22.20	.00	.00	300.70	398.47	2.84	384.00	400.70
9308.000	22.20	.00	.00	352.19	371.45	2.95	354.00	371.00
9316.000	22.20	.00	.00	22.20	39.70	2.63	5.40	53.10
9324.000	22.20	.00	.00	22.20	39.70	2.69	5.40	53.10
9336.000	22.20	.00	.00	307.78	370.61	3.08	343.00	360.00
9520.000	22.20	.00	.00	287.13	378.01	2.54	365.00	375.00
9998.000	22.20	.00	.00	168.31	231.84	3.85	208.50	218.00
10180.000	22.20	.00	.00	142.26	297.72	3.96	183.00	190.00
10198.000	22.20	.00	.00	111.36	126.60	3.27	111.20	126.70
10204.000	22.20	.00	.00	114.40	122.50	3.24	111.20	126.70
10214.000	22.20	.00	.00	157.98	301.12	4.01	178.00	222.00
10493.000	22.20	.00	.00	128.09	297.00	3.03	282.50	297.00
10707.000	22.20	.00	.00	124.17	346.89	2.13	328.50	345.00
10736.000	22.20	.00	.00	36.87	347.31	3.14	328.00	348.00
10761.000	22.20	.00	.00	193.00	208.64	2.48	191.60	213.40
10778.000	22.20	.00	.00	193.00	208.86	2.54	191.60	213.40
10798.000	22.20	.00	.00	138.02	394.47	2.53	376.00	391.00
11084.000	22.20	.00	.00	248.25	442.92	3.01	335.00	352.50
14086.000	22.20	.00	.00	48.89	634.76	3.14	422.00	432.90

SECNO	Q	QWEIR	QPR	SSTA	ENDST	DEPTH	STCHL	STCHR
15286.000	22.20	.00	.00	17.15	247.82	3.17	218.80	229.90

SUMMARY OF ERRORS AND SPECIAL NOTES

THIS RUN EXECUTED 11-30-88

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**********************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
  ERROR CORR -  01,02,03,04,05,06
  MODIFICATION -  50,51,52,53,54,55,56
  IBM-PC-XT VERSION AUGUST 1985
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**********************************************************
*  WATER SURFACE PROFILES                                *
*  VERSION OF NOVEMBER 1976                              *
*  UPDATED MAY 1984                                      *
*  IBM-PC-XT VERSION AUGUST 1985                         *
*  RUN DATE  11-30-85   TIME  20:45:32                   *
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****************************************
*  U.S. ARMY CORPS OF ENGINEERS        *
*  THE HYDROLOGIC ENGINEERING CENTER   *
*  609 SECOND STREET, SUITE D          *
*  DAVIS, CALIFORNIA 95616             *
*  (916) 440-2105 (FTS) 448-2105       *
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X     X  XXXXXXX   XXXXX              XXXXX
X     X  X        X     X           X     X
X     X  X        X                       X
XXXXXXX  XXXX     X         XXXXX    XXXXX
X     X  X        X                  X
X     X  X        X     X            X
X     X  XXXXXXX   XXXXX             XXXXXXX
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THIS RUN EXECUTED 11-30-88

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**********************************************************
 HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
 ERROR CORR -  01,02,03,04,05,06
 MODIFICATION -  50,51,52,53,54,55,56
 IBM-PC-XT VERSION AUGUST 1985
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C
T1      TISDALE HYDRAULICS STUDY
T2      DOGHIDE RIVER AT TISDALE
T3      1:10 DESIGN MODEL

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0.       2.       0.       0.    .001070      1.00      1.0       0.    434.000      .000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

     1.000      .000    -1.000      .000      .000     -.727    -1.000      .000      .000      .000

J3  VARIABLE CODES FOR SUMMARY PRINTOUT

    38.000     3.000     1.000     2.000    16.000    17.000    18.000    13.000    14.000    15.000


     .000    38.000    53.000    54.000     8.000    21.000    22.000      .000      .000      .000

J5  LPRNT     NUMSEC                        ********REQUESTED SECTION NUMBERS********

    -10.000   -10.000      .000      .000      .000      .000      .000      .000      .000      .000

QT     5.000    70.100   108.000   125.000   167.000   116.000      .000      .000      .000      .000
NC      .110      .110      .055      .500      .700      .000      .000      .000      .000      .000
          CROSS SECTION 1-C , 1.1 km. DOWNSTREAM OF THE STUDY AREA
X1  1960.000    20.000    44.100    55.400      .000      .000      .000      .000      .000      .000
GR   438.000      .000   435.120    10.000   434.970    20.000   435.040    30.000   434.970    40.000
GR   433.800    44.100   432.090    46.300   432.130    48.600   431.900    51.500   432.200    53.500
GR   432.780    54.200   433.610    55.400   434.400    58.900   435.060    60.900   435.310    69.300
GR   435.200    79.300   435.090    89.300   435.170    99.300   435.190   109.300   438.000   299.990

NC      .110      .110      .055      .500      .700      .000      .000      .000      .000      .000
          SECTION 1-B , MOST D/S X-SECTION IN STUDY AREA
X1  3000.000    64.000   523.500   531.400  1040.000  1040.000  1040.000      .000      .000      .000
X3    10.000      .000      .000      .000      .000   537.000   436.500      .000      .000      .000
GR   444.900      .000   444.500     7.000   444.000     9.000   443.500    11.000   443.500    21.500
GR   443.500    42.000   443.000   104.000   442.500   146.000   442.000   178.000   442.000   197.000
GR   442.000   270.000   441.500   305.000   441.000   314.000   440.500   318.000   440.000   322.000
GR   439.500   323.500   439.000   325.000   438.500   327.000   438.000   332.000   437.500   333.500
GR   437.000   336.000   436.500   338.000   436.500   372.500   436.500   402.000   436.500   421.500
GR   436.500   425.500   436.500   428.500   436.500   433.500   436.500   438.000   436.500   466.000
GR   436.500   488.000   435.950   500.000   435.900   501.900   436.210   511.700   436.300   517.700
GR   435.410   521.500   434.430   523.500   433.610   525.900   433.260   528.200   433.400   529.500
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GR	434.210	530.600	434.910	531.400	435.450	533.200	435.650	537.000	436.000	558.000

GR	436.000	585.000	436.500	590.500	437.500	595.000	438.000	597.000	438.500	600.000
GR	439.000	602.000	439.500	606.000	440.000	610.000	440.500	613.000	441.000	617.000
GR	441.500	624.000	442.000	671.000	442.000	710.000	441.500	730.000	441.000	757.000
GR	441.000	800.000	441.500	851.000	442.000	866.000	442.500	883.000	.000	.000
NC	.110	.110	.055	.500	.700	.000	.000	.000	.000	.000
	SECTION 1-A , 600 m. D/S HIGHWAY 35 BRIDGE									
X1	3880.000	74.000	325.400	331.600	850.000	778.000	880.000	.000	.000	.000
X3	10.000	.000	.000	121.000	444.000	429.000	438.000	.000	.000	.000
GR	443.700	.000	443.500	6.500	443.000	9.000	442.500	11.500	442.000	15.800
GR	442.000	22.500	442.500	24.000	443.000	26.000	443.500	27.000	440.000	29.000
GR	440.000	72.500	440.000	97.000	444.000	121.000	443.500	212.000	443.000	225.000
GR	442.500	232.500	442.000	234.000	441.500	237.500	441.000	241.000	440.500	244.100
GR	440.000	247.500	439.500	250.000	439.000	251.500	438.500	254.000	438.000	255.000
GR	437.500	256.800	437.000	258.000	437.000	263.000	437.000	271.000	437.000	276.000
GR	437.280	304.000	436.760	312.700	436.430	323.700	435.300	324.600	434.410	325.400
GR	434.100	326.200	434.350	327.600	434.540	329.400	434.860	331.600	435.870	334.600
GR	436.310	336.600	437.030	346.100	436.500	350.500	436.500	354.000	436.500	357.000
GR	436.500	359.000	436.500	362.500	436.500	364.800	437.000	366.000	437.000	401.500
GR	437.000	420.600	437.000	423.000	437.000	429.000	437.000	431.000	437.000	435.500
GR	437.000	438.000	437.000	439.000	437.000	440.000	437.000	461.000	437.000	470.000
GR	437.000	475.500	437.500	478.000	438.000	481.000	438.500	483.800	439.000	487.000
GR	439.500	489.500	440.000	495.500	440.500	502.000	441.000	591.000	441.500	645.500
GR	442.000	684.500	442.500	713.000	443.000	759.000	443.200	823.500	.000	.000
NC	.110	.110	.055	.500	.700	.000	.000	.000	.000	.000
	SECTION 1 , 78 m. D/S HIGHWAY 35 BRIDGE									
X1	4400.000	33.000	35.300	45.700	504.000	368.000	520.000	.000	.000	.000
X3	10.000	.000	.000	35.300	440.200	.000	.000	.000	.000	.000
GR	440.200	.000	440.000	5.500	439.500	9.500	439.000	10.500	438.500	12.000
GR	437.880	20.000	437.450	26.600	436.620	35.300	436.390	38.200	435.450	41.900
GR	436.310	45.700	436.930	48.400	438.000	49.600	438.000	77.500	438.000	118.000
GR	438.000	142.500	438.000	153.500	438.000	164.000	438.000	187.000	438.000	258.000
GR	438.000	266.000	438.500	270.500	439.000	275.000	439.500	279.000	440.000	286.000
GR	440.500	292.500	441.000	300.500	441.500	314.000	442.000	330.000	442.500	351.000
GR	443.000	369.000	443.500	392.000	443.500	435.000	.000	.000	.000	.000
NC	.110	.110	.055	.500	.700	.000	.000	.000	.000	.000
	SECTION 2A , IMMED D/S HIGHWAY 35 BRIDGE									
X1	4478.000	21.000	1.200	31.400	46.000	104.000	78.000	.000	.000	.000
X3	10.000	435.400	.000	5.100	439.950	19.700	439.940	.000	.000	.000
GR	439.950	.000	439.950	.800	439.950	1.200	437.560	1.300	436.000	5.100
GR	436.120	7.000	435.400	8.500	435.220	12.600	435.230	15.100	435.370	16.600
GR	435.850	18.400	436.600	19.700	437.820	24.400	438.300	29.900	438.650	31.300
GR	439.930	31.400	439.930	32.400	439.930	32.900	439.930	34.600	439.930	36.900
GR	442.000	216.000	.000	.000	.000	.000	.000	.000	.000	.000
SB	1.250	1.560	2.600	.000	15.000	.430	89.400	1.848	.000	.000
	SECTION 2B , IMMED U/S HIGHWAY 35 BRIDGE									
X1	4494.000	.000	.000	.000	16.000	16.000	16.000	.000	.000	.000
X2	.000	.000	1.000	439.440	439.930	.000	.000	2.000	.000	.000
X3	10.000	435.400	.000	5.100	439.950	19.700	439.940	.000	.000	.000
BT	21.000	.000	439.950	439.950	.800	439.950	439.950	1.200	439.950	439.950
BT	1.300	439.950	439.460	5.100	439.950	439.460	7.000	439.950	439.950	8.500

BT	439.950	439.460	12.600	439.940	439.450	15.100	439.940	439.450	16.600	439.940
BT	439.450	18.400	439.940	439.450	19.700	439.940	439.450	24.400	439.940	439.450
BT	29.900	439.930	439.440	31.300	439.930	439.440	31.400	439.930	439.930	32.400
BT	439.930	439.930	32.900	439.930	439.930	34.600	439.930	439.930	36.900	439.930
BT	439.930	216.000	442.000	442.000	.000	.000	.000	.000	.000	.000
NC	.070	.070	.055	.300	.500	.000	.000	.000	.000	.000
	SECTION 3A , 134 m. U/S HIGHWAY 35 BRIDGE									
X1	4628.000	50.000	125.500	134.600	144.000	118.000	134.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	223.000	440.000	.000	.000	.000
GR	444.000	.000	444.000	69.000	443.500	77.000	443.000	80.000	442.500	82.000
GR	442.000	85.500	441.500	92.000	441.000	100.000	440.500	102.000	440.000	104.000
GR	439.500	106.000	439.000	110.000	438.730	111.000	437.710	115.500	437.760	125.500
GR	435.900	126.900	435.970	129.500	436.070	131.900	436.480	134.600	437.670	144.600
GR	437.500	146.400	437.450	155.200	437.490	161.700	437.570	171.300	438.290	178.200
GR	439.000	211.500	439.500	214.000	440.000	223.000	439.500	230.000	439.000	233.000
GR	438.500	235.000	438.000	241.000	437.500	244.000	437.500	246.500	438.000	249.000
GR	438.500	251.500	438.500	255.500	438.000	278.000	438.000	308.000	438.500	314.000
GR	439.000	316.000	439.500	318.500	440.000	321.000	440.500	330.000	441.000	340.000
GR	441.500	358.000	442.000	415.500	442.500	451.000	443.000	469.000	443.500	481.000
NC	.070	.070	.055	.100	.300	.000	.000	.000	.000	.000
	SECTION 3B , 48 m. D/S GRID ROAD BRIDGE									
X1	4638.000	53.000	129.500	139.500	10.000	10.000	10.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	219.500	439.500	.000	.000	.000
GR	444.000	.000	444.000	25.000	443.500	45.000	443.000	53.000	443.500	61.000
GR	443.500	78.000	443.000	80.000	442.500	83.000	442.000	87.500	441.500	94.000
GR	441.000	110.500	440.500	114.500	440.000	115.500	439.500	117.000	439.000	118.000
GR	438.500	120.000	438.000	128.000	437.500	129.500	435.900	132.000	435.970	134.500
GR	436.070	135.500	436.480	136.500	437.500	139.500	438.000	141.000	438.500	143.500
GR	438.500	154.500	438.500	174.500	438.500	181.500	438.500	184.500	439.000	217.000
GR	439.500	219.500	439.500	236.500	439.000	238.000	438.500	240.500	438.000	247.000
GR	437.500	249.500	437.500	251.500	438.000	254.500	438.000	259.500	438.000	284.000
GR	438.000	296.500	438.000	309.000	438.500	314.000	439.000	317.000	439.500	320.000
GR	440.000	323.000	440.500	331.000	441.000	338.000	441.500	352.000	442.000	406.000
GR	442.500	449.500	443.000	468.000	443.500	481.000	.000	.000	.000	.000
NC	.070	.070	.055	.300	.500	.000	.000	.000	.000	.000
	SECTION 4A , IMMED D/S GRID ROAD BRIDGE									
X1	4686.000	18.000	78.900	96.700	48.000	48.000	56.000	.000	.000	.000
X3	10.000	.000	.000	83.000	439.980	91.200	439.950	.000	.000	.000
GR	442.500	.000	440.000	73.300	439.980	78.900	437.150	79.000	437.360	81.400
GR	435.500	83.900	435.290	85.300	435.300	87.200	435.460	88.800	436.560	91.200
GR	437.670	96.600	439.900	96.700	439.830	100.600	439.790	102.300	439.740	105.400
GR	439.680	110.500	440.000	260.500	442.500	344.500	.000	.000	.000	.000
SB	1.250	1.560	2.600	.000	7.000	.510	51.400	1.341	.000	.000
	SECTION 4B , IMMED U/S GRID ROAD BRIDGE									
X1	4700.000	.000	.000	.000	14.000	14.000	14.000	.000	.000	.000
X2	.000	.000	1.000	439.430	439.680	.000	.000	2.000	.000	.000
X3	10.000	.000	.000	83.000	439.980	91.200	439.950	.000	.000	.000
BT	18.000	.000	442.500	442.500	73.300	440.000	440.000	78.900	439.980	439.980
BT	79.000	439.980	439.430	81.400	439.980	439.430	83.900	439.980	439.330	85.300
BT	439.980	439.430	87.200	439.980	439.430	88.800	439.970	439.420	91.200	439.950

BT	439.400	96.600	439.900	439.350	96.700	439.900	439.900	100.600	439.830	439.830
BT	102.300	439.790	439.790	105.400	439.740	439.740	110.500	439.680	439.680	260.500
BT	440.000	440.000	344.500	442.500	442.500	.000	.000	.000	.000	.000
NC	.110	.110	.055	.100	.300	.000	.000	.000	.000	.000
	SECTION 4C , 100 m. U/S GRID ROAD BRIDGE									
X1	4800.000	46.000	120.000	127.500	100.000	100.000	100.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	303.500	439.500	.000	.000	.000
GR	443.500	.000	443.000	3.000	442.500	4.500	442.000	5.500	441.500	7.500
GR	441.000	9.000	440.500	11.500	440.000	14.000	439.500	16.500	439.000	22.500
GR	438.500	38.500	438.500	59.500	438.500	95.000	438.500	96.000	438.500	101.500
GR	438.000	112.500	437.500	114.000	437.000	117.000	436.660	120.000	435.730	121.500
GR	435.180	123.500	436.500	127.500	437.000	129.000	437.500	129.500	438.000	134.000
GR	438.500	166.000	438.500	195.500	438.300	264.500	438.500	286.000	439.000	287.500
GR	439.500	290.000	439.500	303.500	439.000	307.500	438.500	309.000	438.000	319.000
GR	438.000	336.000	438.500	385.000	439.000	393.000	439.500	398.500	440.000	406.000
GR	440.500	413.500	441.000	421.500	441.500	428.500	442.000	439.500	442.500	454.500
GR	443.000	498.500	.000	.000	.000	.000	.000	.000	.000	.000
NC	.110	.110	.055	.300	.500	.000	.000	.000	.000	.000
	SECTION 5 , 500 m. U/S GRID ROAD BRIDGE									
X1	5170.000	57.000	245.100	260.000	364.000	356.000	370.000	.000	.000	.000
X3	10.000	.000	.000	108.000	443.000	.000	.000	.000	.000	.000
GR	444.200	.000	444.000	3.000	443.500	6.000	443.000	8.000	442.500	9.000
GR	442.000	10.000	441.500	12.500	441.000	15.500	440.500	25.000	440.500	38.000
GR	441.000	42.000	441.500	56.000	442.000	59.500	442.500	67.000	443.000	74.000
GR	443.000	108.000	442.500	114.000	442.000	116.000	441.500	117.000	441.000	118.000
GR	440.500	119.000	440.000	120.500	439.500	122.200	439.000	128.000	439.000	138.500
GR	439.000	155.000	439.000	164.500	439.000	175.500	439.000	181.000	439.000	204.000
GR	439.000	217.000	439.000	220.000	439.000	225.000	439.000	232.000	438.780	233.300
GR	438.660	241.300	437.930	245.100	436.660	249.100	435.730	252.600	435.180	257.800
GR	436.930	258.700	437.590	260.000	439.160	261.900	439.350	264.900	440.020	267.000
GR	440.030	268.500	441.000	271.000	441.500	279.000	442.000	296.000	442.500	307.500
GR	443.000	325.500	443.500	356.000	443.500	428.000	443.000	429.500	443.000	442.500
GR	443.500	444.500	443.780	452.000	.000	.000	.000	.000	.000	.000
NC	.110	.110	.055	.300	.500	.000	.000	.000	.000	.000
	SECTION 6 , 220 m. D/S OLD HIGHWAY 35 BRIDGE									
X1	5500.000	74.000	531.600	537.600	296.000	326.000	330.000	.000	.000	.000
X3	10.000	.000	.000	431.000	446.000	.000	.000	.000	.000	.000
GR	447.500	.000	447.500	76.000	447.000	91.000	446.500	131.000	446.000	162.000
GR	445.500	186.000	445.000	215.500	444.500	250.000	444.000	276.000	444.000	281.000
GR	444.000	288.000	443.500	291.000	443.000	304.500	442.500	313.500	442.000	314.500
GR	442.000	331.000	442.500	340.000	443.000	346.000	443.500	352.000	444.000	359.000
GR	444.500	362.500	445.000	370.000	445.000	376.000	444.500	377.500	444.500	381.000
GR	445.000	383.000	445.340	388.500	445.000	395.500	445.000	402.000	445.500	404.000
GR	446.000	408.000	446.000	431.000	445.500	451.000	445.000	457.000	444.500	462.000
GR	444.000	468.000	443.500	472.500	443.000	478.000	442.500	480.000	442.000	481.500
GR	441.500	487.000	441.000	490.500	440.500	499.000	440.600	508.000	439.370	518.000
GR	437.560	523.000	437.890	525.300	437.070	531.600	437.130	532.500	437.120	533.600
GR	437.530	535.500	438.160	536.400	439.570	537.600	439.610	540.000	439.380	549.500
GR	441.000	556.000	441.010	556.000	442.500	576.000	444.000	585.900	444.860	595.800
GR	445.100	598.000	446.000	634.500	446.500	655.800	447.000	675.000	447.000	774.000
GR	447.000	819.500	447.000	830.000	446.500	906.000	446.500	964.500	446.500	971.500

GR	446.500	989.000	447.000	992.000	447.500	994.000	447.500	1009.000	.000	.000
NC	.110	.110	.055	.300	.500	.000	.000	.000	.000	.000
	SECTION 7A , IMMED D/S OLD HIGHWAY 35 BRIDGE									
X1	5712.000	16.000	11.200	27.500	184.000	210.000	212.000	.000	.000	.000
X3	10.000	.000	.000	14.000	442.400	20.400	442.390	.000	.000	.000
GR	442.580	.000	442.470	7.700	442.440	9.200	442.430	9.500	442.410	11.200
GR	439.050	11.300	438.170	13.900	437.990	15.500	437.970	19.100	438.330	20.400
GR	439.100	22.900	439.940	24.100	440.670	27.400	442.380	27.500	442.480	30.300
GR	442.650	38.000	.000	.000	.000	.000	.000	.000	.000	.000
SB	.950	1.230	2.600	.000	7.700	.000	44.000	1.050	.000	.000
	SECTION 7B , IMMED U/S OLD HIGHWAY 35 BRIDGE									
X1	5726.000	.000	.000	.000	14.000	14.000	14.000	.000	.000	.000
X2	.000	.000	1.000	441.930	442.380	.000	.000	.000	.000	.000
X3	10.000	.000	.000	14.000	442.400	20.400	442.390	.000	.000	.000
BT	16.000	.000	442.580	442.580	7.700	442.470	442.470	9.200	442.440	442.440
BT	9.500	442.430	442.430	11.200	442.410	442.410	11.300	442.410	441.960	13.900
BT	442.400	441.950	15.500	442.400	441.950	19.100	442.390	441.940	20.400	442.390
BT	441.940	22.900	442.390	441.940	24.100	442.380	441.930	27.400	442.380	441.930
BT	27.500	442.380	442.380	30.300	442.480	442.480	38.000	442.650	442.650	.000
NC	.110	.110	.055	.300	.500	.000	.000	.000	.000	.000
	SECTION 8 , 500 m. U/S OLD HIGHWAY 35 BRIDGE									
X1	6136.000	60.000	423.500	434.000	382.000	412.000	410.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	492.000	446.000	.000	.000	.000
GR	450.500	.000	450.000	38.000	449.500	84.500	449.000	134.000	448.500	173.500
GR	448.000	204.000	447.500	207.000	447.000	227.000	446.500	236.500	446.000	241.500
GR	445.500	249.500	445.000	254.500	444.500	259.000	444.000	262.500	443.500	268.000
GR	443.000	271.500	442.500	276.000	442.000	281.500	441.500	290.500	441.500	327.000
GR	442.000	342.000	442.000	352.000	441.500	358.000	441.500	387.000	441.160	405.000
GR	441.260	415.000	440.260	423.500	438.890	425.400	438.640	427.000	439.000	428.800
GR	439.140	431.400	439.750	432.900	440.560	434.000	441.390	440.900	444.040	449.000
GR	446.400	454.000	445.880	461.100	446.000	465.000	446.500	471.500	446.500	482.500
GR	446.000	485.000	446.000	492.000	446.000	520.500	445.500	541.000	445.500	590.000
GR	446.000	619.000	446.500	672.000	447.000	704.000	447.500	749.000	448.000	767.000
GR	448.000	896.000	447.500	932.000	447.000	954.500	446.500	1050.000	446.500	1058.000
GR	446.500	1092.500	446.500	1100.000	447.000	1102.000	447.500	1104.000	447.800	1109.000
NC	.110	.110	.055	.300	.500	.000	.000	.000	.000	.000
	SECTION 9 , SEWAGE TREATMENT PLANT - PUMPING STATION									
X1	6656.000	49.000	141.700	152.000	480.000	540.000	520.000	.000	.000	.000
GR	448.000	.000	447.500	7.500	447.000	14.000	446.500	18.500	446.000	22.000
GR	445.500	24.500	445.000	27.500	444.500	31.000	444.000	33.000	443.500	36.500
GR	443.000	38.500	442.500	41.500	442.500	88.000	442.210	106.000	442.210	116.000
GR	442.210	123.000	442.230	130.000	442.200	134.000	441.190	140.600	440.110	141.700
GR	439.480	142.900	439.540	144.100	439.730	147.000	439.730	148.700	440.100	150.400
GR	440.570	152.000	442.020	161.400	442.850	171.400	443.680	176.600	444.260	179.900
GR	447.480	187.600	447.500	190.000	448.000	208.500	448.500	232.000	448.500	240.500
GR	448.500	254.000	449.000	276.000	449.500	299.300	450.000	334.000	450.000	356.000
GR	449.500	383.000	449.000	413.000	449.500	461.000	448.000	500.000	448.000	552.000
GR	448.000	590.500	447.500	702.000	447.500	760.000	447.500	764.000	.000	.000

NC	.110	.110	.055	.100	.300	.000	.000	.000	.000	.000
	SECTION 10 , ALLEY - 109 th. AVENUE									
X1	7480.000	70.000	462.900	471.000	750.000	804.000	824.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	563.000	447.000	.000	.000	.000
GR	450.600	.000	450.500	18.500	450.000	37.500	449.500	53.500	449.000	124.000
GR	448.500	187.500	448.000	193.000	448.000	197.000	448.000	199.000	448.000	200.000
GR	448.000	201.000	448.000	203.000	448.000	204.000	448.000	206.500	448.000	208.500
GR	448.000	211.000	448.000	212.500	448.000	253.000	448.000	256.000	448.000	257.000
GR	448.000	258.500	448.000	260.000	448.000	262.500	448.000	263.500	448.000	266.500
GR	447.500	267.000	447.500	270.000	448.000	272.000	448.000	283.000	447.500	284.000
GR	447.000	285.000	446.000	286.000	445.000	286.500	444.500	288.000	444.000	290.500
GR	443.500	291.500	443.000	293.000	442.500	380.000	442.500	388.500	442.500	453.000
GR	442.600	455.000	441.820	460.600	442.330	462.900	441.390	464.900	440.940	465.700
GR	440.410	467.000	440.430	468.400	441.290	469.400	442.250	471.000	443.460	473.100
GR	443.840	476.000	444.730	479.300	444.790	480.900	445.000	509.500	445.500	512.500
GR	446.000	516.000	446.500	527.000	447.000	551.500	447.000	563.000	446.500	565.000
GR	446.000	568.000	446.500	574.000	446.500	576.000	447.000	578.500	447.500	590.000
GR	447.500	600.000	447.800	612.500	448.000	678.500	448.500	747.500	448.900	813.500
NC	.110	.110	.055	.300	.500	.000	.000	.000	.000	.000
	SECTION 11 , 150 m. D/S GOLF COURSE BRIDGE									
X1	8224.000	47.000	659.400	672.600	636.000	610.000	744.000	.000	.000	.000
GR	450.000	.000	449.500	82.000	449.500	162.000	449.000	250.000	448.500	357.000
GR	448.500	381.000	448.500	391.000	448.000	480.000	448.070	491.000	448.000	569.500
GR	447.750	592.000	447.000	613.000	446.500	622.500	446.000	629.000	445.500	638.500
GR	445.000	643.000	445.240	655.900	444.430	659.400	442.370	661.200	440.990	663.900
GR	440.980	665.700	441.240	668.200	442.440	670.800	443.240	672.600	443.640	675.200
GR	444.000	678.000	444.000	707.000	444.000	720.000	444.000	743.000	444.000	779.000
GR	444.000	785.000	444.000	813.000	444.000	815.000	444.000	819.000	444.500	825.500
GR	445.000	831.500	445.000	857.000	445.000	864.000	445.000	870.000	445.000	875.500
GR	445.500	893.000	446.000	896.500	446.500	907.000	447.000	921.000	447.500	959.000
GR	447.500	994.500	447.500	998.400	.000	.000	.000	.000	.000	.000
NC	.110	.110	.055	.300	.500	.000	.000	.000	.000	.000
	SECTION 12A , IMMED D/S GOLF COURSE BRIDGE - 105 th. AVENUE									
X1	8472.000	18.000	162.800	180.600	190.000	242.000	248.000	.000	.000	.000
X3	10.000	441.300	.000	167.100	445.120	174.800	445.130	.000	.000	.000
GR	447.550	.000	444.920	156.400	445.000	159.400	445.070	162.800	443.640	162.900
GR	444.070	165.400	442.190	167.100	440.930	170.100	440.920	174.800	441.700	178.000
GR	442.720	179.100	443.210	180.500	445.110	180.600	445.050	182.600	444.860	189.600
GR	445.000	265.600	447.500	375.600	448.000	391.600	.000	.000	.000	.000
SB	1.050	1.560	2.600	.000	8.000	.570	49.900	1.288	.000	.000
	SECTION 12B , IMMED U/S GOLF COURSE BRIDGE - 105 th. AVENUE									
X1	8484.000	.000	.000	.000	12.000	12.000	12.000	.000	.000	.000
X2	.000	.000	1.000	444.610	439.860	.000	.000	2.000	.000	.000
X3	10.000	441.300	.000	167.100	445.120	174.800	445.130	.000	.000	.000
BT	18.000	.000	447.500	447.500	156.400	444.920	444.920	159.400	445.000	445.000
BT	162.800	445.070	445.070	162.900	445.070	444.550	165.400	445.110	444.590	167.100
BT	445.120	444.600	170.100	445.130	444.610	174.800	445.130	444.610	178.000	445.120
BT	444.600	179.100	445.120	444.600	180.500	445.110	444.590	180.600	445.110	445.110
BT	182.600	445.050	445.050	189.600	444.860	444.860	265.600	445.000	445.000	375.600
BT	447.500	447.500	375.600	448.000	448.000	.000	.000	.000	.000	.000

NC	.110	.110	.055	.100	.300	.000	.000	.000	.000	.000
	SECTION 12C , 138 m. U/S GOLF COURSE BRIDGE - 105 th. AVENUE									
X1	8622.000	60.000	386.000	394.800	125.000	120.000	138.000	.000	.000	.000
GR	447.500	.000	447.000	5.500	446.500	10.000	446.000	15.000	445.500	17.500
GR	445.000	21.000	444.500	22.000	444.500	47.500	444.500	107.000	444.500	108.000
GR	444.500	116.000	444.500	118.000	444.500	121.000	444.500	179.000	444.500	226.000
GR	444.500	265.500	444.500	267.000	444.500	267.500	444.500	269.000	444.500	273.000
GR	444.500	274.500	444.500	277.000	444.500	295.500	444.500	326.000	444.500	337.000
GR	444.500	351.000	444.000	352.500	443.500	354.500	443.500	355.500	443.500	358.500
GR	443.500	359.500	443.500	361.000	443.500	362.500	444.000	363.500	444.000	384.000
GR	443.500	386.000	443.000	387.500	442.500	389.000	442.190	390.500	441.550	392.000
GR	441.860	393.000	442.500	394.000	443.000	394.800	443.500	396.000	444.500	397.000
GR	445.000	398.000	445.500	400.000	446.000	410.000	446.500	426.000	447.000	442.000
GR	447.500	454.000	448.500	526.000	449.000	578.000	449.500	625.000	449.600	700.500
GR	449.500	709.000	449.200	817.000	449.200	875.000	449.300	956.500	449.300	1049.500
NC	.110	.110	.055	.100	.300	.000	.000	.000	.000	.000
	SECTION 13 , 103 rd. AVENUE AT RCMP STATION									
X1	8922.000	45.000	424.700	440.000	309.000	296.000	300.000	.000	.000	.000
GR	449.000	.000	449.000	15.500	448.500	59.000	448.000	68.000	447.500	76.000
GR	447.000	84.500	446.500	95.500	446.000	102.500	445.500	127.000	445.500	142.000
GR	445.000	171.000	445.000	175.000	445.000	283.500	444.500	287.000	444.500	292.000
GR	444.500	300.000	444.500	309.000	444.500	397.000	444.360	412.000	444.710	421.900
GR	444.010	424.700	443.770	428.000	442.190	430.500	441.590	432.000	441.860	433.500
GR	443.270	435.100	444.530	437.200	445.970	446.000	446.660	449.700	446.730	455.000
GR	447.000	458.000	447.500	472.500	448.000	497.000	448.500	520.000	449.000	536.500
GR	449.500	552.000	449.600	558.500	449.500	650.500	449.400	684.000	449.200	778.500
GR	449.300	859.000	449.500	883.500	449.600	915.000	449.700	973.500	449.800	1033.500
NC	.110	.110	.055	.100	.300	.000	.000	.000	.000	.000
	SECTION 14 , 120 m. D/S CNR BRIDGE									
X1	9198.000	51.000	384.000	400.700	266.000	268.000	276.000	.000	.000	.000
X3	10.000	.000	.000	123.500	449.000	.000	.000	.000	.000	.000
GR	449.500	.000	449.000	2.000	448.500	35.500	448.500	45.500	448.500	53.000
GR	448.000	59.000	447.500	67.000	447.000	73.000	446.500	79.500	446.500	81.500
GR	447.000	92.000	447.500	97.000	448.000	106.000	448.500	112.500	449.000	123.500
GR	449.000	236.000	448.500	250.000	448.000	259.000	447.500	263.000	447.000	269.000
GR	446.500	276.500	446.000	279.500	445.500	283.000	445.000	331.000	445.000	340.000
GR	445.000	349.000	444.900	384.000	444.330	385.900	443.630	387.300	443.280	388.200
GR	442.730	389.600	442.480	391.800	442.500	394.400	443.450	396.100	445.260	398.300
GR	446.060	400.700	448.810	406.000	449.450	410.700	449.570	412.700	449.700	444.000
GR	449.500	480.000	449.400	498.000	449.200	560.500	449.500	626.000	449.700	669.000
GR	450.000	713.000	450.500	785.000	451.000	842.000	451.000	859.000	451.500	883.000
GR	451.900	958.000	.000	.000	.000	.000	.000	.000	.000	.000
NC	.110	.110	.055	.100	.300	.000	.000	.000	.000	.000
	SECTION 15A , IMMED D/S CNR BRIDGE									
X1	9316.000	21.000	5.400	53.100	106.000	124.000	118.000	.000	.000	.000
X3	10.000	.000	.000	22.200	450.380	39.700	450.410	.000	.000	.000
GR	450.340	.000	450.350	5.000	449.690	5.400	449.230	5.500	448.230	11.600
GR	445.060	17.300	443.780	19.400	443.450	22.200	442.830	25.800	442.870	32.500
GR	443.770	34.200	444.230	36.800	444.330	38.000	443.900	39.700	444.110	42.300
GR	445.380	45.800	447.770	49.300	449.050	52.900	449.770	53.100	450.430	53.200

GR	450.440	60.000	.000	.000	.000	.000	.000	.000	.000	.000
SB	1.250	2.000	2.600	.000	13.000	8.000	120.000	2.667	.000	.000
	SECTION 15B , IMMED U/S CNR BRIDGE									
X1	9324.000	.000	.000	.000	8.000	8.000	8.000	.000	.000	.000
X2	.000	.000	1.000	449.690	450.340	.000	.000	2.000	.000	.000
X3	10.000	.000	.000	22.200	450.380	39.700	450.410	.000	.000	.000
BT	21.000	.000	450.340	450.340	5.000	450.350	450.350	5.400	450.350	449.690
BT	5.500	450.350	449.690	11.600	450.360	449.700	17.300	450.370	449.710	19.400
BT	450.370	449.710	22.200	450.380	449.720	25.800	450.380	449.720	32.500	450.390
BT	449.730	34.200	450.400	449.740	36.800	450.400	449.740	38.000	450.400	449.740
BT	39.700	450.410	449.750	42.300	450.410	449.750	45.800	450.420	449.760	49.300
BT	450.420	449.760	52.900	450.430	449.770	53.100	450.430	449.770	53.200	450.430
BT	450.430	60.000	450.440	450.440	.000	.000	.000	.000	.000	.000
NC	.110	.110	.055	.600	.800	.000	.000	.000	.000	.000
	SECTION 16 , 300 m. U/S CNR BRIDGE									
X1	9520.000	57.000	365.000	375.000	194.000	190.000	196.000	.000	.000	.000
X3	10.000	.000	.000	216.000	450.000	.000	.000	.000	.000	.000
GR	449.100	.000	449.000	4.000	448.500	5.500	448.000	7.000	448.000	16.000
GR	448.500	42.000	449.000	55.000	449.500	82.000	450.000	140.500	450.400	191.500
GR	450.000	216.000	449.500	221.000	449.000	228.000	448.500	237.000	448.000	240.000
GR	447.500	243.000	447.000	245.000	446.500	248.000	446.000	249.500	446.000	273.000
GR	446.000	285.000	445.500	289.000	445.500	311.000	445.500	320.000	445.270	358.000
GR	445.020	362.800	444.670	365.000	443.380	367.100	443.410	368.000	443.340	369.400
GR	443.190	371.300	443.280	373.700	444.090	374.500	444.510	375.000	445.810	378.200
GR	446.500	384.200	447.600	394.200	448.480	404.200	448.600	406.700	449.000	413.000
GR	449.500	429.000	450.000	457.000	450.000	509.000	450.000	513.500	450.000	522.000
GR	449.500	523.000	449.500	527.000	450.000	531.000	450.500	633.500	451.000	646.000
GR	451.500	655.000	452.000	801.000	452.500	809.500	453.000	816.000	453.000	861.500
GR	453.000	884.000	453.100	891.000	.000	.000	.000	.000	.000	.000
NC	.110	.110	.055	.600	.800	.000	.000	.000	.000	.000
	SECTION 17A , 200 m. D/S WALKING BRIDGE									
X1	9998.000	35.000	207.500	219.000	472.000	430.000	478.000	.000	.000	.000
GR	451.050	.000	450.500	20.000	450.000	70.000	449.500	151.000	449.000	157.000
GR	449.000	160.000	448.000	163.000	447.500	165.000	447.000	166.000	446.500	168.000
GR	446.000	169.000	445.500	206.000	445.000	207.500	444.000	208.500	443.000	210.000
GR	442.500	211.000	442.500	213.300	442.500	215.500	443.000	216.000	444.000	218.000
GR	445.000	219.000	445.500	221.000	446.000	222.500	446.500	236.000	446.500	294.000
GR	447.000	305.000	447.000	328.000	447.500	333.000	448.000	336.000	448.500	339.000
GR	449.000	346.000	449.500	347.000	450.000	352.000	450.000	404.000	450.400	430.000
NC	.070	.070	.055	.600	.800	.000	.000	.000	.000	.000
	SECTION 17B , IMMED D/S WALKING BRIDGE									
X1	10198.000	19.000	111.200	126.700	160.000	160.000	200.000	.000	.000	.000
X3	10.000	.000	.000	111.200	448.160	126.600	448.010	.000	.000	.000
GR	450.000	.000	448.200	99.300	448.100	106.300	448.150	110.100	448.160	111.200
GR	447.700	111.300	445.460	111.400	444.570	114.000	443.730	115.200	443.470	116.600
GR	443.220	118.700	443.260	121.100	443.190	123.200	444.540	125.900	444.900	126.600
GR	448.010	126.700	448.010	126.800	449.000	296.800	450.000	334.000	.000	.000

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SB      .950     1.560     2.600      .000     8.100      .000    57.500     .768      .000      .000
        SECTION 17C , IMMED U/S WALKING BRIDGE
X1  10204.000     .000      .000      .000     6.000     6.000     6.000     .000      .000      .000
X2      .000     .000     1.000   447.770   448.010      .000      .000    1.330      .000      .000
X3    10.000     .000      .000   114.400   448.140   122.500   448.060     .000      .000      .000
BT    19.000     .000   450.000   450.000    99.300   448.200   448.200  106.300   448.100   448.100
BT   110.100  448.150   448.150   111.200   448.160   448.160   111.300  448.160   448.160   111.400
BT   448.160  447.770   114.000   448.140   447.750   115.200   448.120  447.730   116.600   448.110
BT   447.720  118.700   448.100   447.710   121.100   448.080   447.690  123.200   448.060   447.670
BT   125.900  448.030   447.640   126.600   448.010   447.620   126.700  448.010   448.010   126.800
BT   448.010  448.010   296.800   449.000   449.000   334.000   450.000  450.000      .000      .000

NC      .070     .070      .055      .100      .300      .000      .000     .000      .000      .000
        SECTION 17D , 289 m. U/S WALKING BRIDGE
X1  10493.000   38.000   282.500   297.000   280.000   240.000   289.000     .000      .000      .000
X3    10.000     .000      .000      .000      .000   297.000   447.000     .000      .000      .000
GR   451.000     .000   450.500     8.000   450.000    10.000   449.500   12.000   449.000    14.000
GR   448.500   15.000   448.000    17.500   447.500    19.500   447.500   21.000   447.500    24.000
GR   447.500   26.000   447.500    29.000   447.500    37.000   447.500   85.000   447.500    91.000
GR   447.500   94.500   447.500    98.500   446.500   129.000   446.000  204.500   446.000   208.000
GR   445.500  282.000   445.000   282.500   444.500   285.000   444.000  286.500   443.500   289.000
GR   444.000  291.000   444.500   293.500   445.000   297.000   445.500  299.500   446.000   318.000
GR   446.500  336.000   447.500   346.000   448.000   351.000   448.500  362.000   449.000   380.000
GR   449.500  389.000   450.000   414.000   450.400   460.500      .000     .000      .000      .000

NC      .070     .070      .055      .100      .300      .000      .000     .000      .000      .000
        SECTION 17E , 54 m. D/S HIGHWAY 3 BRIDGE
X1  10707.000   44.000   328.500   345.000   210.000   186.000   214.000     .000      .000      .000
GR   451.000     .000   450.500     8.000   450.000    10.500   449.500   12.000   449.000    13.000
GR   448.500   15.000   448.000    16.000   447.500    17.500   447.500   19.000   447.500    20.500
GR   447.500   21.500   447.500    23.000   447.500    25.000   447.500   92.000   447.500   112.000
GR   446.500  126.000   446.500   142.000   446.500   148.000   446.500  153.000   446.500   162.500
GR   446.500  174.000   446.500   183.000   446.500   220.000   446.000  248.500   446.000   255.000
GR   446.000  292.000   446.000   304.000   446.000   328.500   445.500  330.000   445.000   338.000
GR   444.500  339.500   444.500   342.000   445.000   344.000   446.000  345.000   446.500   346.500
GR   447.000  348.000   447.500   350.000   448.000   351.000   448.500  351.500   449.000   352.500
GR   449.500  353.500   450.000   401.000   450.000   407.500   450.000  410.000      .000      .000

NC      .070     .070      .055      .300      .500      .000      .000     .000      .000      .000
        SECTION 18A , IMMED D/S HIGHWAY 3 BRIDGE
X1  10761.000   14.000   191.600   213.400    40.000    54.000    54.000     .000      .000      .000
X3    10.000     .000      .000   193.000   449.500   213.300   449.400     .000      .000      .000
GR   449.500     .000   449.170   190.500   449.190   191.600   445.620  191.700   444.900   195.400
GR   444.200  197.900   444.150   200.500   444.190   202.500   444.580  204.700   446.490   208.100
GR   447.830  213.300   449.400   213.400   449.420   214.400   449.510  221.700      .000      .000

SB     1.250     1.560     2.600      .000    10.000      .540    73.500    1.100      .000      .000
        SECTION 18B , IMMED U/S HIGHWAY 3 BRIDGE
X1  10778.000     .000      .000      .000    17.000    17.000    17.000     .000      .000      .000
X2      .000     .000     1.000   448.900   449.090      .000      .000    2.000      .000      .000
X3    10.000     .000      .000   193.000   449.500   213.300   449.400     .000      .000      .000
BT    14.000     .000   449.500   449.500   190.500   449.170   449.170  191.600   449.190   449.190
BT   191.700  449.190   448.690   195.400   449.220   448.720   197.900  449.240   448.740   200.500
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BT	449.270	448.770	202.500	449.300	448.800	204.700	449.310	448.810	208.100	449.350
BT	448.850	213.300	449.400	448.900	213.400	449.400	449.400	214.400	449.420	449.420
BT	221.700	449.510	449.510	.000	.000	.000	.000	.000	.000	.000
	SECTION 19 , 300 m. U/S HIGHWAY 3 BRIDGE									
X1	11084.000	43.000	335.000	352.500	286.000	326.000	306.000	.000	.000	.000
GR	453.000	.000	452.500	59.000	452.000	114.000	451.500	144.000	451.000	173.000
GR	450.500	201.000	450.000	229.500	449.500	231.000	449.000	232.000	448.500	233.500
GR	448.000	236.000	447.500	237.500	447.000	244.000	446.500	253.500	446.500	295.000
GR	446.500	335.000	445.720	337.000	445.030	339.000	444.240	339.700	443.760	341.600
GR	444.070	343.400	444.200	344.800	444.700	346.600	445.700	349.800	446.400	352.500
GR	446.500	417.000	446.500	428.000	447.000	455.000	447.500	482.000	448.000	495.000
GR	448.500	522.000	448.500	540.000	448.000	550.000	448.500	560.000	449.000	563.000
GR	449.000	612.000	448.500	631.000	448.500	636.000	449.000	680.000	449.000	706.500
GR	449.000	742.000	449.500	755.000	450.000	783.000	.000	.000	.000	.000
NC	.110	.110	.055	.100	.300	.000	.000	.000	.000	.000
	SECTION 20 , 1300 m. FROM U/S END OF STUDY AREA									
X1	14086.000	58.000	422.000	432.900	2810.000	2744.000	3002.000	.000	.000	.000
GR	451.000	.000	450.500	25.500	450.000	33.400	449.500	41.000	449.000	45.000
GR	448.500	53.500	448.500	93.000	449.000	98.000	449.500	103.000	450.000	110.000
GR	450.500	116.000	451.000	121.500	451.500	129.000	452.000	138.500	452.500	146.000
GR	453.000	172.000	453.000	366.000	452.500	380.500	452.000	388.000	451.500	394.500
GR	451.000	398.500	450.500	404.500	450.000	407.000	449.500	410.000	448.510	412.000
GR	447.560	422.000	446.770	423.300	446.350	424.000	445.900	425.100	445.690	426.200
GR	445.630	427.200	445.670	428.300	446.250	430.000	447.250	431.300	447.450	431.900
GR	447.760	432.900	448.420	440.300	448.700	450.000	448.500	574.000	448.500	577.500
GR	448.500	586.500	448.500	598.000	448.500	631.500	449.000	637.500	449.000	643.500
GR	450.000	646.500	450.500	656.000	451.000	657.500	451.500	661.500	452.000	668.500
GR	452.500	677.500	453.000	690.000	453.500	718.000	454.000	742.000	454.000	786.000
GR	454.000	816.000	454.500	879.000	455.000	984.000	.000	.000	.000	.000
NC	.110	.110	.055	.100	.300	.000	.000	.000	.000	.000
	SECTION 21 , MOST UPSTREAM CROSS SECTION									
X1	15286.000	51.000	218.800	229.900	1064.000	866.000	1200.000	.000	.000	.000
GR	454.500	.000	454.000	2.000	453.500	4.000	453.000	5.500	452.500	9.000
GR	452.000	11.000	450.500	13.500	450.000	15.000	449.500	17.000	449.000	20.000
GR	449.000	61.000	449.000	105.000	449.000	116.000	449.000	129.000	449.000	135.000
GR	449.000	167.000	449.000	176.000	449.000	202.000	449.480	206.500	448.780	215.700
GR	447.950	218.800	447.520	222.400	446.380	223.500	446.300	224.600	446.560	225.600
GR	447.950	226.500	448.300	228.200	449.070	229.900	448.980	235.400	449.000	241.900
GR	449.530	248.500	449.500	280.000	449.500	287.000	449.500	291.500	449.500	308.000
GR	449.500	317.000	449.500	326.000	449.500	329.000	450.000	331.000	450.500	334.500
GR	451.000	337.000	451.500	340.000	452.000	346.000	452.000	360.000	452.000	380.000
GR	452.500	390.000	453.000	399.000	453.500	407.000	454.000	414.500	454.500	423.500
GR	455.000	441.000	.000	.000	.000	.000	.000	.000	.000	.000
EJ	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

THIS RUN EXECUTED 11-30-88

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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
  ERROR CORR -  01,02,03,04,05,06
  MODIFICATION -  50,51,52,53,54,55,56
  IBM-PC-XT VERSION AUGUST 1985
**************************************************


T1      TISDALE HYDRAULICS STUDY
T2      DOGHIDE RIVER AT TISDALE
T3      1:50 DESIGN EVENT

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    NVINS     Q         WSEL      FQ

       0.        3.        0.        0.   .001070      1.00       1.0        0.   434.000      .000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

     2.000      .000    -1.000      .000      .000     -.664    -1.000      .000      .000      .000
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THIS RUN EXECUTED 11-30-88

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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
  ERROR CORR -  01,02,03,04,05,06
  MODIFICATION -  50,51,52,53,54,55,56
  IBM-PC-XT VERSION AUGUST 1985
**************************************************


T1      TISDALE HYDRAULICS STUDY
T2      DOGHIDE RIVER AT TISDALE
T3      1:100 DESIGN EVENT

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0.        4.        0.        0.   .001070      1.00       1.0        0.   434.000      .000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

     3.000      .000    -1.000      .000      .000     -.655    -1.000      .000      .000      .000
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THIS RUN EXECUTED 11-30-88

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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
  ERROR CORR -  01,02,03,04,05,06
  MODIFICATION -  50,51,52,53,54,55,56
  IBM-PC-XT VERSION AUGUST 1985
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T1      TISDALE HYDRAULICS STUDY
T2      DOGHIDE RIVER AT TISDALE
T3      1:500 DESIGN EVENT

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0.        5.        0.        0.   .001070      1.00       1.0        0.   434.000      .000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

    5.000      .000    -1.000      .000      .000     -.618    -1.000      .000      .000      .000
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THIS RUN EXECUTED 11-30-88

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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
  ERROR CORR -  01,02,03,04,05,06
  MODIFICATION -  50,51,52,53,54,55,56
  IBM-PC-XT VERSION AUGUST 1985
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T1      TISDALE HYDRAULICS STUDY
T2      DOGHIDE RIVER AT TISDALE
T3      HISTORIC FLOOD

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0.        6.        0.        0.   .001070      1.00      1.0        0.   434.000      .000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

    15.000      .000    -1.000      .000      .000     -.665    -1.000      .000      .000      .000
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THIS RUN EXECUTED 11-30-88

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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
  ERROR CORR -  01,02,03,04,05,06
  MODIFICATION -  50,51,52,53,54,55,56
  IBM-PC-XT VERSION AUGUST 1985
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

1:10 DESIGN MODEL

SUMMARY PRINTOUT

SECNO	EG	CWSEL	CRIWS	K*XNL	K*XNCH	K*XNR	QLOB	QCH	QROB
1960.000	435.67	435.55	433.95	110.00	39.99	110.00	4.69	59.66	5.74
1960.000	436.12	435.97	434.52	110.00	36.52	110.00	10.92	80.18	16.90
1960.000	436.28	436.13	434.73	110.00	36.02	110.00	13.97	87.81	23.21
1960.000	436.62	436.44	435.63	110.00	33.99	110.00	20.91	106.89	39.20
1960.000	436.20	436.05	434.63	110.00	36.58	110.00	12.51	83.35	20.14
3000.000	436.96	436.84	435.82	110.00	39.99	110.00	17.43	46.37	6.29
3000.000	437.30	437.19	436.80	110.00	36.52	110.00	39.88	54.70	13.42
3000.000	437.44	437.34	436.89	110.00	36.02	110.00	50.65	57.47	16.88
3000.000	437.74	437.64	437.07	110.00	33.99	110.00	75.92	66.01	25.08
3000.000	437.37	437.27	436.84	110.00	36.58	110.00	45.22	55.64	15.13
3880.000	437.86	437.81	437.14	110.00	39.99	110.00	13.45	31.40	25.25
3880.000	438.17	438.10	437.46	110.00	36.52	110.00	23.47	43.07	41.46
3880.000	438.30	438.22	437.53	110.00	36.02	110.00	28.25	47.04	49.71
3880.000	438.57	438.47	437.78	110.00	33.99	110.00	39.55	57.41	70.04
3880.000	438.24	438.16	437.49	110.00	36.58	110.00	25.84	44.64	45.52
4400.000	438.51	438.37	437.68	110.00	39.99	110.00	.00	47.28	22.82
4400.000	438.79	438.67	438.39	110.00	36.52	110.00	.00	56.28	51.72
4400.000	438.90	438.79	438.46	110.00	36.02	110.00	.00	59.56	65.44
4400.000	439.16	439.05	438.67	110.00	33.99	110.00	.00	69.30	97.70
4400.000	438.85	438.73	438.42	110.00	36.58	110.00	.00	57.45	58.55
4478.000	438.67	438.53	436.95	110.00	39.99	110.00	.00	70.10	.00
4478.000	439.09	438.81	437.39	110.00	36.52	110.00	.00	108.00	.00
4478.000	439.26	438.92	437.57	110.00	36.02	110.00	.00	125.00	.00
4478.000	439.67	439.13	437.98	110.00	33.99	110.00	.00	167.00	.00
4478.000	439.17	438.87	437.48	110.00	36.58	110.00	.00	116.00	.00

SECNO	EG	CWSEL	CRIWS	K*XNL	K*XNCH	K*XNR	QLOB	QCH	QROB
4494.000	438.68	438.54	.00	110.00	39.99	110.00	.00	70.10	.00
4494.000	439.10	438.83	.00	110.00	36.52	110.00	.00	108.00	.00
4494.000	439.29	438.95	.00	110.00	36.02	110.00	.00	125.00	.00
4494.000	439.71	439.19	.00	110.00	33.99	110.00	.00	167.00	.00
4494.000	439.19	438.89	.00	110.00	36.58	110.00	.00	116.00	.00
4628.000	438.86	438.81	437.98	70.00	39.99	70.00	5.67	32.01	32.41
4628.000	439.33	439.28	438.24	70.00	36.52	70.00	10.46	43.28	54.26
4628.000	439.54	439.48	438.35	70.00	36.02	70.00	12.81	47.15	65.04
4628.000	440.01	439.95	438.58	70.00	33.99	70.00	18.78	57.17	91.04
4628.000	439.43	439.38	438.29	70.00	36.58	70.00	11.63	44.74	59.63
4638.000	439.03	438.48	438.46	70.00	39.99	70.00	1.97	66.78	1.35
4638.000	439.42	439.12	438.99	70.00	36.52	70.00	7.63	75.90	24.47
4638.000	439.60	439.37	439.15	70.00	36.02	70.00	9.85	76.89	38.27
4638.000	440.04	439.91	439.34	70.00	33.99	70.00	13.63	77.37	76.00
4638.000	439.51	439.25	439.08	70.00	36.58	70.00	8.77	75.72	31.51
4686.000	439.39	439.09	437.54	70.00	39.99	70.00	.00	70.10	.00
4686.000	439.87	439.18	438.19	70.00	36.52	70.00	.00	108.00	.00
4686.000	440.15	439.28	438.46	70.00	36.02	70.00	.00	125.00	.00
4686.000	440.86	439.40	439.07	70.00	33.99	70.00	.00	167.00	.00
4686.000	440.00	439.23	438.32	70.00	36.58	70.00	.00	116.00	.00
4700.000	439.43	439.13	.00	70.00	39.99	70.00	.00	70.10	.00
* 4700.000	439.87	439.18	.00	70.00	36.52	70.00	.00	108.00	.00
4700.000	440.15	439.28	.00	70.00	36.02	70.00	.00	125.00	.00
4700.000	440.86	438.76	.00	70.00	33.99	70.00	.00	167.00	.00
4700.000	440.00	439.23	.00	70.00	36.58	70.00	.00	116.00	.00
4800.000	439.52	439.50	437.85	110.00	39.99	110.00	16.92	24.43	28.75
4800.000	439.99	439.98	438.78	110.00	36.52	110.00	27.65	29.77	50.58
4800.000	440.28	440.27	438.88	110.00	36.02	110.00	32.57	29.94	62.49
4800.000	441.10	441.09	439.07	110.00	33.99	110.00	43.92	30.65	92.42
4800.000	440.13	440.12	438.83	110.00	36.58	110.00	30.06	29.62	56.32
5170.000	439.66	439.61	437.57	110.00	39.99	110.00	12.22	57.31	.58
5170.000	440.13	440.06	438.05	110.00	36.52	110.00	29.29	77.42	1.29
5170.000	440.40	440.34	438.24	110.00	36.02	110.00	40.06	83.11	1.84
5170.000	441.17	441.12	438.64	110.00	33.99	110.00	68.49	94.89	3.63
5170.000	440.26	440.19	438.14	110.00	36.58	110.00	34.54	79.91	1.54
5500.000	440.14	439.89	439.15	110.00	39.99	110.00	29.68	38.72	1.70
5500.000	440.69	440.28	439.77	110.00	36.52	110.00	43.04	58.87	6.09
5500.000	440.93	440.50	439.98	110.00	36.02	110.00	49.28	66.48	9.24
5500.000	441.56	441.18	440.42	110.00	33.99	110.00	66.38	81.48	19.14
5500.000	440.81	440.39	439.86	110.00	36.58	110.00	46.17	62.21	7.61

	SECNO	EG	CWSEL	CRIWS	K*XNL	K*XNCH	K*XNR	QLOB	QCH	QROB
	5712.000	441.80	441.19	440.34	110.00	39.99	110.00	.00	70.10	.00
	5712.000	442.79	441.73	441.10	110.00	36.52	110.00	.00	108.00	.00
	5712.000	443.19	441.89	441.42	110.00	36.02	110.00	.00	125.00	.00
*	5712.000	444.20	442.02	442.02	110.00	33.99	110.00	.00	167.00	.00
	5712.000	442.98	441.82	441.24	110.00	36.58	110.00	.00	116.00	.00
	5726.000	441.96	441.42	440.33	110.00	39.99	110.00	.00	70.10	.00
	5726.000	443.04	442.09	441.10	110.00	36.52	110.00	.00	108.00	.00
	5726.000	443.47	442.20	441.42	110.00	36.02	110.00	.00	125.00	.00
	5726.000	444.20	441.98	.00	110.00	33.99	110.00	.00	167.00	.00
	5726.000	443.25	442.15	441.25	110.00	36.58	110.00	.00	116.00	.00
	6136.000	442.57	442.54	440.94	110.00	39.99	110.00	29.38	37.75	2.97
	6136.000	443.57	443.55	441.78	110.00	36.52	110.00	60.37	42.60	5.04
	6136.000	444.04	444.03	441.93	110.00	36.02	110.00	74.46	44.47	6.07
	6136.000	445.00	444.99	442.15	110.00	33.99	110.00	105.95	52.19	8.86
	6136.000	443.79	443.78	441.87	110.00	36.58	110.00	67.26	43.20	5.53
	6656.000	442.94	442.83	441.51	110.00	39.99	110.00	10.99	52.72	6.38
	6656.000	443.74	443.67	442.08	110.00	36.52	110.00	35.83	60.66	11.51
	6656.000	444.17	444.12	442.61	110.00	36.02	110.00	48.55	62.22	14.23
	6656.000	445.08	445.05	442.94	110.00	33.99	110.00	75.93	70.43	20.64
	6656.000	443.94	443.88	442.33	110.00	36.58	110.00	42.06	61.10	12.84
	7480.000	443.68	443.65	442.99	110.00	39.99	110.00	46.61	23.15	.34
	7480.000	444.18	444.16	443.19	110.00	36.52	110.00	77.19	29.95	.86
	7480.000	444.49	444.47	443.26	110.00	36.02	110.00	92.23	31.50	1.27
	7480.000	445.27	445.26	443.41	110.00	33.99	110.00	127.15	36.44	3.41
	7480.000	444.32	444.30	443.24	110.00	36.58	110.00	84.52	30.43	1.05
	8224.000	444.51	444.38	443.22	110.00	39.99	110.00	.00	57.96	12.14
	8224.000	444.86	444.72	444.28	110.00	36.52	110.00	.02	74.94	33.04
	8224.000	445.05	444.92	444.38	110.00	36.02	110.00	.07	79.49	45.44
	8224.000	445.59	445.50	444.58	110.00	33.99	110.00	1.22	84.27	81.51
	8224.000	444.95	444.81	444.36	110.00	36.58	110.00	.04	77.34	38.63
	8472.000	445.29	444.94	443.50	110.00	39.99	110.00	.00	70.10	.00
	8472.000	445.83	445.34	444.18	110.00	36.52	110.00	.72	101.82	5.46
*	8472.000	445.93	445.50	445.50	110.00	36.02	110.00	2.25	108.88	13.86
*	8472.000	446.18	445.77	445.77	110.00	33.99	110.00	6.93	127.52	32.55
*	8472.000	445.87	445.50	445.50	110.00	36.58	110.00	2.13	100.77	13.10
	8484.000	445.29	444.94	.00	110.00	39.99	110.00	.00	70.10	.00
	8484.000	445.83	445.05	.00	110.00	36.52	110.00	.00	108.00	.00
	8484.000	445.93	445.54	.00	110.00	36.02	110.00	2.73	106.30	15.97
	8484.000	446.18	445.81	.00	110.00	33.99	110.00	7.65	124.70	34.65
	8484.000	445.87	445.54	.00	110.00	36.58	110.00	2.54	98.59	14.88

SECNO	EG	CWSEL	CRIWS	K*XNL	K*XNCH	K*XNR	QLOB	QCH	QROB
8622.000	445.41	445.40	444.63	110.00	39.99	110.00	49.31	19.94	.85
8622.000	445.97	445.97	444.83	110.00	36.52	110.00	83.60	23.09	1.31
8622.000	446.04	446.03	444.88	110.00	36.02	110.00	97.24	26.21	1.55
8622.000	446.29	446.28	445.01	110.00	33.99	110.00	131.57	33.10	2.33
8622.000	445.97	445.96	444.84	110.00	36.58	110.00	89.77	24.83	1.40
8922.000	445.53	445.50	444.80	110.00	39.99	110.00	39.96	30.13	.00
8922.000	446.04	446.03	445.05	110.00	36.52	110.00	72.93	35.07	.00
8922.000	446.12	446.11	445.13	110.00	36.02	110.00	85.40	39.59	.00
8922.000	446.38	446.35	445.30	110.00	33.99	110.00	117.05	49.89	.06
8922.000	446.05	446.04	445.08	110.00	36.58	110.00	78.47	37.53	.00
9198.000	445.80	445.70	444.66	110.00	39.99	110.00	16.77	53.33	.00
9198.000	446.24	446.13	445.46	110.00	36.52	110.00	37.30	70.70	.00
9198.000	446.34	446.22	445.59	110.00	36.02	110.00	44.67	80.33	.00
9198.000	446.62	446.45	445.84	110.00	33.99	110.00	64.06	102.93	.02
9198.000	446.27	446.15	445.53	110.00	36.58	110.00	40.59	75.41	.00
9316.000	446.00	445.87	444.52	110.00	39.99	110.00	.00	70.10	.00
9316.000	446.47	446.24	444.92	110.00	36.52	110.00	.00	108.00	.00
9316.000	446.62	446.33	445.07	110.00	36.02	110.00	.00	125.00	.00
9316.000	446.98	446.51	445.44	110.00	33.99	110.00	.00	167.00	.00
9316.000	446.53	446.27	444.98	110.00	36.58	110.00	.00	116.00	.00
9324.000	446.21	446.11	.00	110.00	39.99	110.00	.00	70.10	.00
9324.000	446.89	446.72	.00	110.00	36.52	110.00	.00	108.00	.00
9324.000	447.18	446.98	.00	110.00	36.02	110.00	.00	125.00	.00
9324.000	447.25	446.87	.00	110.00	33.99	110.00	.00	167.00	.00
9324.000	447.02	446.84	.00	110.00	36.58	110.00	.00	116.00	.00
9520.000	446.46	446.38	445.28	110.00	39.99	110.00	24.50	44.16	1.43
9520.000	447.13	447.07	446.01	110.00	36.52	110.00	51.56	53.09	3.36
9520.000	447.42	447.37	446.15	110.00	36.02	110.00	63.98	56.52	4.50
9520.000	447.65	447.57	446.44	110.00	33.99	110.00	86.64	73.93	6.43
9520.000	447.27	447.21	446.06	110.00	36.58	110.00	57.44	54.69	3.87
9998.000	446.85	446.77	444.70	110.00	39.99	110.00	9.62	56.67	3.81
9998.000	447.42	447.34	445.25	110.00	36.52	110.00	18.66	72.71	16.63
9998.000	447.68	447.61	445.50	110.00	36.02	110.00	22.88	77.27	24.85
9998.000	447.96	447.86	446.31	110.00	33.99	110.00	30.88	97.78	38.33
9998.000	447.55	447.47	445.36	110.00	36.58	110.00	20.78	74.67	20.55
10198.000	447.04	446.93	445.08	70.00	39.99	70.00	.00	70.10	.00
10198.000	447.67	447.48	445.56	70.00	36.52	70.00	.00	108.00	.00
10198.000	447.96	447.73	445.73	70.00	36.02	70.00	.00	125.00	.00
10198.000	448.35	448.00	446.14	70.00	33.99	70.00	.00	167.00	.00
10198.000	447.81	447.60	445.63	70.00	36.58	70.00	.00	116.00	.00

	SECNO	EG	CWSEL	CRIWS	K*XNL	K*XNCH	K*XNR	QLOB	QCH	QROB
	10204.000	447.21	446.90	445.36	70.00	39.99	70.00	.00	70.10	.00
	10204.000	447.98	447.42	446.02	70.00	36.52	70.00	.00	108.00	.00
	10204.000	448.33	447.66	446.29	70.00	36.02	70.00	.00	125.00	.00
	10204.000	449.03	447.86	446.90	70.00	33.99	70.00	.00	167.00	.00
	10204.000	448.15	447.54	446.15	70.00	36.58	70.00	.00	116.00	.00
	10493.000	447.36	447.35	445.84	70.00	39.99	70.00	44.19	24.72	1.19
	10493.000	448.10	448.10	446.28	70.00	36.52	70.00	73.08	28.39	6.54
	10493.000	448.45	448.44	446.31	70.00	36.02	70.00	86.48	29.11	9.41
	10493.000	449.18	449.18	446.53	70.00	33.99	70.00	117.42	32.70	16.87
	10493.000	448.27	448.26	446.34	70.00	36.58	70.00	79.59	28.52	7.90
	10707.000	447.39	447.38	446.33	70.00	39.99	70.00	48.13	21.48	.49
	10707.000	448.12	448.12	446.56	70.00	36.52	70.00	81.58	25.35	1.07
	10707.000	448.46	448.46	446.65	70.00	36.02	70.00	97.16	26.48	1.36
	10707.000	449.19	449.19	446.78	70.00	33.99	70.00	133.80	31.12	2.09
	10707.000	448.28	448.28	446.61	70.00	36.58	70.00	89.11	25.68	1.21
	10761.000	447.48	447.33	445.98	70.00	39.99	70.00	.00	70.10	.00
	10761.000	448.23	448.03	446.44	70.00	36.52	70.00	.00	108.00	.00
	10761.000	448.57	448.36	446.65	70.00	36.02	70.00	.00	125.00	.00
	10761.000	449.32	449.07	447.10	70.00	33.99	70.00	.00	167.00	.00
	10761.000	448.39	448.19	446.54	70.00	36.58	70.00	.00	116.00	.00
	10778.000	447.50	447.35	.00	70.00	39.99	70.00	.00	70.10	.00
	10778.000	448.25	448.05	.00	70.00	36.52	70.00	.00	108.00	.00
	10778.000	448.59	448.38	.00	70.00	36.02	70.00	.00	125.00	.00
	10778.000	449.40	449.17	.00	70.00	33.99	70.00	.00	167.00	.00
	10778.000	448.41	448.21	.00	70.00	36.58	70.00	.00	116.00	.00
	11084.000	447.66	447.65	446.54	70.00	39.99	70.00	20.11	26.74	23.25
	11084.000	448.37	448.37	446.82	70.00	36.52	70.00	34.04	31.80	42.15
	11084.000	448.71	448.70	446.85	70.00	36.02	70.00	39.93	33.26	51.81
	11084.000	449.51	449.50	446.98	70.00	33.99	70.00	50.79	36.38	79.84
	11084.000	448.53	448.53	446.81	70.00	36.58	70.00	36.99	32.33	46.68
	14086.000	448.96	448.72	448.06	110.00	39.99	110.00	4.55	58.95	6.60
*	14086.000	449.21	448.88	448.88	110.00	36.52	110.00	9.19	79.88	18.93
	14086.000	449.32	449.12	448.96	110.00	36.02	110.00	14.36	74.50	36.14
	14086.000	449.81	449.74	449.11	110.00	33.99	110.00	26.31	66.63	74.06
	14086.000	449.25	449.00	448.94	110.00	36.58	110.00	11.75	76.76	27.48
	15286.000	450.02	450.01	449.32	110.00	39.99	110.00	38.62	23.58	7.90
	15286.000	450.33	450.31	449.51	110.00	36.52	110.00	60.56	31.57	15.87
	15286.000	450.38	450.36	449.57	110.00	36.02	110.00	70.20	35.84	18.95
	15286.000	450.58	450.55	449.72	110.00	33.99	110.00	93.72	45.78	27.50
	15286.000	450.35	450.33	449.50	110.00	36.58	110.00	65.24	33.42	17.34

1:10 DESIGN MODEL

SUMMARY PRINTOUT

SECNO	SSTA	ENDST	DEPTH	STCHL	STCHR
1960.000	8.50	133.79	3.65	44.10	55.40
1960.000	7.06	162.00	4.07	44.10	55.40
1960.000	6.51	172.84	4.23	44.10	55.40
1960.000	5.40	194.41	4.54	44.10	55.40
1960.000	6.76	167.89	4.15	44.10	55.40
3000.000	336.63	592.04	3.58	523.50	531.40
3000.000	335.01	593.64	3.93	523.50	531.40
3000.000	334.29	594.29	4.08	523.50	531.40
3000.000	333.08	595.56	4.38	523.50	531.40
3000.000	334.65	593.97	4.01	523.50	531.40
3880.000	255.69	429.00	3.71	325.40	331.60
3880.000	254.81	481.54	4.00	325.40	331.60
3880.000	254.57	482.22	4.12	325.40	331.60
3880.000	254.05	483.65	4.37	325.40	331.60
3880.000	254.68	481.89	4.06	325.40	331.60
4400.000	35.30	269.35	2.92	35.30	45.70
4400.000	35.30	272.11	3.22	35.30	45.70
4400.000	35.30	273.19	3.34	35.30	45.70
4400.000	35.30	275.39	3.60	35.30	45.70
4400.000	35.30	272.66	3.28	35.30	45.70
4478.000	5.10	19.70	3.13	1.20	31.40
4478.000	5.10	19.70	3.41	1.20	31.40
4478.000	5.10	19.70	3.52	1.20	31.40
4478.000	5.10	19.70	3.73	1.20	31.40
4478.000	5.10	19.70	3.47	1.20	31.40
4494.000	5.10	19.70	3.14	1.20	31.40
4494.000	5.10	19.70	3.43	1.20	31.40
4494.000	5.10	19.70	3.55	1.20	31.40
4494.000	5.10	19.70	3.79	1.20	31.40
4494.000	5.10	19.70	3.49	1.20	31.40
4628.000	110.71	202.52	2.91	125.50	134.60
4628.000	107.79	212.88	3.38	125.50	134.60
4628.000	106.15	213.91	3.58	125.50	134.60
4628.000	104.19	222.16	4.05	125.50	134.60
4628.000	106.92	213.42	3.48	125.50	134.60
4638.000	120.36	143.39	2.58	129.50	139.50
4638.000	117.74	217.64	3.22	129.50	139.50
4638.000	117.25	218.88	3.47	129.50	139.50
4638.000	115.76	322.49	4.01	129.50	139.50
4638.000	117.49	218.28	3.35	129.50	139.50

SECNO	SSTA	ENDST	DEPTH	STCHL	STCHR
4686.000	83.00	91.20	3.80	78.90	96.70
4686.000	83.00	91.20	3.89	78.90	96.70
4686.000	83.00	91.20	3.99	78.90	96.70
4686.000	83.00	91.20	4.11	78.90	96.70
4686.000	83.00	91.20	3.94	78.90	96.70
4700.000	83.00	91.20	3.84	78.90	96.70
* 4700.000	83.00	91.20	3.89	78.90	96.70
4700.000	83.00	91.20	3.99	78.90	96.70
4700.000	83.00	91.20	3.47	78.90	96.70
4700.000	83.00	91.20	3.94	78.90	96.70
4800.000	16.49	398.53	4.32	120.00	127.50
4800.000	14.10	405.69	4.80	120.00	127.50
4800.000	12.63	410.10	5.09	120.00	127.50
4800.000	8.73	422.77	5.91	120.00	127.50
4800.000	13.40	407.80	4.94	120.00	127.50
5170.000	121.84	265.71	4.43	245.10	260.00
5170.000	120.32	268.58	4.88	245.10	260.00
5170.000	119.49	269.29	5.16	245.10	260.00
5170.000	117.76	272.94	5.94	245.10	260.00
5170.000	119.92	268.92	5.01	245.10	260.00
5500.000	513.77	551.55	2.82	531.60	537.60
5500.000	510.59	553.12	3.21	531.60	537.60
5500.000	498.94	554.01	3.43	531.60	537.60
5500.000	489.23	558.29	4.11	531.60	537.60
5500.000	509.69	553.56	3.32	531.60	537.60
5712.000	14.00	20.40	3.22	11.20	27.50
5712.000	14.00	20.40	3.76	11.20	27.50
5712.000	14.00	20.40	3.92	11.20	27.50
* 5712.000	14.00	20.40	4.05	11.20	27.50
5712.000	14.00	20.40	3.85	11.20	27.50
5726.000	14.00	20.40	3.45	11.20	27.50
5726.000	14.00	20.40	4.12	11.20	27.50
5726.000	14.00	20.40	4.23	11.20	27.50
5726.000	14.00	20.40	4.01	11.20	27.50
5726.000	14.00	20.40	4.18	11.20	27.50
6136.000	275.72	444.39	3.90	423.50	434.00
6136.000	267.48	447.49	4.91	423.50	434.00
6136.000	262.34	448.95	5.39	423.50	434.00
6136.000	254.65	451.00	6.35	423.50	434.00
6136.000	264.99	448.19	5.14	423.50	434.00

	SECNO	SSTA	ENDST	DEPTH	STCHL	STCHR
	6656.000	39.51	171.17	3.35	141.70	152.00
	6656.000	35.28	176.56	4.19	141.70	152.00
	6656.000	32.53	179.09	4.64	141.70	152.00
	6656.000	27.23	181.78	5.57	141.70	152.00
	6656.000	33.81	177.76	4.40	141.70	152.00
	7480.000	291.20	474.57	3.24	462.90	471.00
	7480.000	289.76	477.14	3.75	462.90	471.00
	7480.000	288.19	478.31	4.06	462.90	471.00
	7480.000	286.37	511.01	4.85	462.90	471.00
	7480.000	289.00	477.71	3.89	462.90	471.00
	8224.000	659.44	823.95	3.40	659.40	672.60
	8224.000	658.11	828.23	3.74	659.40	672.60
	8224.000	657.30	830.49	3.94	659.40	672.60
	8224.000	638.44	893.02	4.52	659.40	672.60
	8224.000	657.78	829.17	3.83	659.40	672.60
	8472.000	167.10	174.80	3.64	162.80	180.60
	8472.000	142.80	274.94	4.04	162.80	180.60
*	8472.000	132.18	282.60	4.20	162.80	180.60
*	8472.000	114.59	295.28	4.47	162.80	180.60
*	8472.000	132.09	282.67	4.20	162.80	180.60
	8484.000	167.10	174.80	3.64	162.80	180.60
	8484.000	167.10	174.80	3.75	162.80	180.60
	8484.000	129.23	284.73	4.24	162.80	180.60
	8484.000	111.76	297.32	4.51	162.80	180.60
	8484.000	129.43	284.58	4.24	162.80	180.60
	8622.000	18.21	399.60	3.85	386.00	394.80
	8622.000	15.17	409.34	4.42	386.00	394.80
	8622.000	14.69	410.98	4.48	386.00	394.80
	8622.000	12.26	418.77	4.73	386.00	394.80
	8622.000	15.19	409.24	4.41	386.00	394.80
	8922.000	126.75	439.10	3.91	424.70	440.00
	8922.000	102.08	440.84	4.44	424.70	440.00
	8922.000	101.03	441.90	4.52	424.70	440.00
	8922.000	97.54	445.40	4.76	424.70	440.00
	8922.000	102.01	440.92	4.45	424.70	440.00
	9198.000	281.54	399.65	3.22	384.00	400.70
	9198.000	278.65	400.86	3.65	384.00	400.70
	9198.000	278.19	401.01	3.74	384.00	400.70
	9198.000	276.77	401.46	3.97	384.00	400.70
	9198.000	278.52	400.90	3.67	384.00	400.70

SECNO	SSTA	ENDST	DEPTH	STCHL	STCHR
9316.000	22.20	39.70	3.04	5.40	53.10
9316.000	22.20	39.70	3.41	5.40	53.10
9316.000	22.20	39.70	3.50	5.40	53.10
9316.000	22.20	39.70	3.68	5.40	53.10
9316.000	22.20	39.70	3.44	5.40	53.10
9324.000	22.20	39.70	3.28	5.40	53.10
9324.000	22.20	39.70	3.89	5.40	53.10
9324.000	22.20	39.70	4.15	5.40	53.10
* 9324.000	22.20	39.70	4.04	5.40	53.10
9324.000	22.20	39.70	4.01	5.40	53.10
9520.000	248.37	383.14	3.19	365.00	375.00
9520.000	244.69	389.45	3.88	365.00	375.00
9520.000	243.51	392.13	4.18	365.00	375.00
9520.000	242.57	393.95	4.38	365.00	375.00
9520.000	244.18	390.61	4.02	365.00	375.00
9998.000	166.95	299.78	4.27	207.50	219.00
9998.000	165.32	331.42	4.84	207.50	219.00
9998.000	164.57	333.64	5.11	207.50	219.00
9998.000	163.58	335.14	5.36	207.50	219.00
9998.000	165.06	332.70	4.97	207.50	219.00
10198.000	111.33	126.60	3.74	111.20	126.70
10198.000	111.31	126.60	4.29	111.20	126.70
10198.000	111.29	126.60	4.54	111.20	126.70
10198.000	111.24	126.60	4.81	111.20	126.70
10198.000	111.30	126.60	4.41	111.20	126.70
10204.000	114.40	122.50	3.69	111.20	126.70
10204.000	114.40	122.50	4.20	111.20	126.70
10204.000	114.40	122.50	4.44	111.20	126.70
10204.000	114.40	122.50	4.64	111.20	126.70
10204.000	114.40	122.50	4.32	111.20	126.70
10493.000	103.16	342.94	3.85	282.50	297.00
10493.000	17.05	352.99	4.60	282.50	297.00
10493.000	15.33	360.54	4.94	282.50	297.00
10493.000	13.29	383.19	5.68	282.50	297.00
10493.000	16.23	356.61	4.76	282.50	297.00
10707.000	113.69	349.52	2.88	328.50	345.00
10707.000	15.77	351.11	3.62	328.50	345.00
10707.000	15.09	351.46	3.96	328.50	345.00
10707.000	12.63	352.87	4.69	328.50	345.00
10707.000	15.44	351.28	3.78	328.50	345.00

	SECNO	SSTA	ENDST	DEPTH	STCHL	STCHR
	10761.000	193.00	211.38	3.18	191.60	213.40
	10761.000	193.00	213.30	3.88	191.60	213.40
	10761.000	193.00	213.30	4.21	191.60	213.40
	10761.000	193.00	213.30	4.92	191.60	213.40
	10761.000	193.00	213.30	4.04	191.60	213.40
	10778.000	193.00	211.43	3.20	191.60	213.40
	10778.000	193.00	213.30	3.90	191.60	213.40
	10778.000	193.00	213.30	4.23	191.60	213.40
	10778.000	193.00	213.30	5.02	191.60	213.40
	10778.000	193.00	213.30	4.06	191.60	213.40
	11084.000	237.06	485.84	3.89	335.00	352.50
	11084.000	234.16	557.36	4.61	335.00	352.50
	11084.000	232.89	653.94	4.94	335.00	352.50
	11084.000	231.01	754.88	5.74	335.00	352.50
	11084.000	233.41	638.49	4.77	335.00	352.50
	14086.000	49.63	634.23	3.09	422.00	432.90
*	14086.000	47.01	636.08	3.25	422.00	432.90
	14086.000	44.03	643.86	3.49	422.00	432.90
	14086.000	37.38	645.72	4.11	422.00	432.90
	14086.000	45.01	637.50	3.37	422.00	432.90
	15286.000	14.98	331.04	3.71	218.80	229.90
	15286.000	14.06	333.20	4.01	218.80	229.90
	15286.000	13.90	333.57	4.06	218.80	229.90
	15286.000	13.43	334.72	4.25	218.80	229.90
	15286.000	13.99	333.36	4.03	218.80	229.90

SUMMARY OF ERRORS AND SPECIAL NOTES

CAUTION SECNO= 4700.000 PROFILE= 2 20 TRIALS OF EG NOT ENOUGH

CAUTION SECNO= 5712.000 PROFILE= 4 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 5712.000 PROFILE= 4 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 8472.000 PROFILE= 3 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 8472.000 PROFILE= 3 MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 8472.000 PROFILE= 4 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 8472.000 PROFILE= 4 MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 8472.000 PROFILE= 5 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 8472.000 PROFILE= 5 MINIMUM SPECIFIC ENERGY

CAUTION SECNO= 9324.000 PROFILE= 4 HYDRAULIC JUMP D.S.

CAUTION SECNO= 14086.000 PROFILE= 2 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 14086.000 PROFILE= 2 MINIMUM SPECIFIC ENERGY

THIS RUN EXECUTED 11-30-88

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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
  ERROR CORR -  01,02,03,04,05,06
  MODIFICATION -  50,51,52,53,54,55,56
  IBM-PC-XT VERSION AUGUST 1985
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**********************************************
*  WATER SURFACE PROFILES                    *
*  VERSION OF NOVEMBER 1976                  *
*  UPDATED MAY 1984                          *
*  IBM-PC-XT VERSION AUGUST 1985             *
*  RUN DATE  12-01-88   TIME  09:49:53       *
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*  U.S. ARMY CORPS OF ENGINEERS      *
*  THE HYDROLOGIC ENGINEERING CENTER *
*  609 SECOND STREET, SUITE D        *
*  DAVIS, CALIFORNIA 95616           *
*    (916) 440-2105 (FTS) 448-2105   *
**************************************
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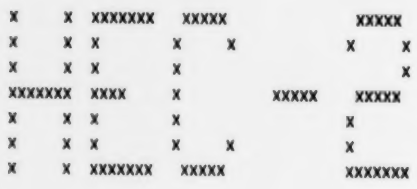

THIS RUN EXECUTED 12-01-88

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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
  ERROR CORR -  01,02,03,04,05,06
  MODIFICATION -  50,51,52,53,54,55,56
  IBM-PC-XT VERSION AUGUST 1985
**************************************************


C
T1      TISDALE HYDRAULICS STUDY
T2      DOGHIDE RIVER AT TISDALE
T3      1:500 DESIGN MODEL

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0.       2.        0.        0.   .001070      1.00      1.0       0.   436.460      .000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

     1.000      .000    -1.000      .000      .000     -.618    -1.000      .000      .000    15.000

J3  VARIABLE CODES FOR SUMMARY PRINTOUT

    38.000     3.000     1.000     2.000    16.000    17.000    18.000    13.000    14.000    15.000

      .000    38.000    43.000    46.000    47.000    53.000    54.000     8.000    21.000    22.000

      .000    38.000     3.000     1.000    53.000    27.000    54.000    28.000      .000      .000

J5  LPRNT     NUMSEC                        ********REQUESTED SECTION NUMBERS********

   -10.000   -10.000      .000      .000      .000      .000      .000      .000      .000      .000

QT     2.000   167.000   167.000      .000      .000      .000      .000      .000      .000      .000
NC      .110      .110      .055      .100      .300      .000      .000      .000      .000      .000
          CROSS SECTION 1-C , 1.1 km. DOWNSTREAM OF THE STUDY AREA
X1  1960.000    20.000    44.100    55.400      .000      .000      .000      .000      .000      .000
GR   438.000      .000   435.120    10.000   434.970    20.000   435.040    30.000   434.970    40.000
GR   433.800    44.100   432.090    46.300   432.130    48.600   431.900    51.500   432.200    53.500
GR   432.780    54.200   433.610    55.400   434.400    58.900   435.060    60.900   435.310    69.300
GR   435.200    79.300   435.090    89.300   435.170    99.300   435.190   109.300   438.000   299.990

NC      .110      .110      .055      .100      .300      .000      .000      .000      .000      .000
ET      .000      .000     9.100      .000      .000      .000      .000      .000   342.000   597.000
          SECTION 1-B , MOST D/S X-SECTION IN STUDY AREA
X1  3000.000    64.000   523.500   531.400  1040.000  1040.000  1040.000      .000      .000      .000
GR   444.900      .000   444.500     7.000   444.000     9.000   443.500    11.000   443.500    21.500
GR   443.500    42.000   443.000   104.000   442.500   146.000   442.000   178.000   442.000   197.000
GR   442.000   270.000   441.500   305.000   441.000   314.000   440.500   318.000   440.000   322.000
GR   439.500   323.500   439.000   325.000   438.500   327.000   438.000   332.000   437.500   333.500
GR   437.000   336.000   436.500   338.000   436.500   372.500   436.500   402.000   436.500   421.500
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GR	436.500	425.500	436.500	428.500	436.500	433.500	436.500	438.000	436.500	466.000

GR	436.500	488.000	435.950	500.000	435.900	501.900	436.210	511.700	436.300	517.700
GR	435.410	521.500	434.430	523.500	433.610	525.900	433.260	528.200	433.400	529.500
GR	434.210	530.600	434.910	531.400	435.450	533.200	435.650	537.000	436.500	558.000
GR	436.500	585.000	436.500	590.500	437.500	595.000	438.000	597.000	438.500	600.000
GR	439.000	602.000	439.500	606.000	440.000	610.000	440.500	613.000	441.000	617.000
GR	441.500	624.000	442.000	671.000	442.000	710.000	441.500	730.000	441.000	757.000
GR	441.000	800.000	441.500	851.000	442.000	866.000	442.500	883.000	.000	.000
NC	.110	.110	.055	.100	.300	.000	.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	252.000	486.000
	SECTION 1-A , 600 m. D/S HIGHWAY 35 BRIDGE									
X1	3880.000	74.000	325.400	331.600	850.000	778.000	880.000	.000	.000	.000
GR	443.700	.000	443.500	6.500	443.000	9.000	442.500	11.500	442.000	15.800
GR	442.000	22.500	442.500	24.000	443.000	26.000	443.500	27.000	440.000	29.000
GR	440.000	72.500	440.000	97.000	444.000	121.000	443.500	212.000	443.000	225.000
GR	442.500	232.500	442.000	234.000	441.500	237.500	441.000	241.000	440.500	244.100
GR	440.000	247.500	439.500	250.000	439.000	251.500	438.500	254.000	438.000	255.000
GR	437.500	256.800	437.000	258.000	437.000	263.000	437.000	271.000	437.000	276.000
GR	437.280	304.000	436.760	312.700	436.430	323.700	435.300	324.600	434.410	325.400
GR	434.100	326.200	434.350	327 .0	434.540	329.400	434.860	331.600	435.870	334.600
GR	436.310	336.600	437.030	346.100	436.500	350.500	436.500	354.000	436.500	357.000
GR	436.500	359.000	436.500	362.500	436.500	364.800	437.000	366.000	437.000	401.500
GR	437.000	420.600	437.000	423.000	437.000	429.000	438.000	431.000	438.000	435.500
GR	438.000	438.000	438.000	439.000	438.000	440.000	438.000	461.000	438.000	470.000
GR	438.000	475.500	437.000	478.000	438.000	481.000	438.500	483.800	439.000	487.000
GR	439.500	489.500	440.000	495.500	440.500	502.000	441.000	591.000	441.500	645.500
GR	442.000	684.500	442.500	713.000	443.000	759.000	443.200	823.500	.000	.000
NC	.110	.110	.055	.100	.300	.000	.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	20.000	270.000
	SECTION 1 , 78 m. D/S HIGHWAY 35 BRIDGE									
X1	4400.000	33.000	35.300	45.700	504.000	368.000	520.000	.000	.000	.000
GR	440.200	.000	440.200	5.500	440.200	9.500	440.200	10.500	440.200	12.000
GR	440.200	20.000	440.200	26.600	440.200	35.300	436.390	38.200	435.450	41.900
GR	436.310	45.700	436.930	48.400	438.000	49.600	438.000	77.500	438.000	118.000
GR	438.000	142.500	438.000	153.500	438.000	164.000	438.000	187.000	438.000	258.000
GR	438.000	266.000	438.500	270.500	439.000	275.000	439.500	279.000	440.000	286.000
GR	440.500	292.500	441.000	300.500	441.500	314.000	442.000	330.000	442.500	351.000
GR	443.000	369.000	443.500	392.000	443.500	435.000	.000	.000	.000	.000
NC	.070	.070	.055	.100	.300	.000	.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	118.700	438.000
	SYNTHETIC X-SEC (E1) LOCATED 10 m. D/S HIGHWAY 35 BRIDGE									
X1	4468.000	30.000	278.000	294.000	36.000	94.000	68.000	.000	.000	.000
GR	442.640	.000	442.500	4.000	442.500	83.000	440.000	90.000	439.000	100.000
GR	438.500	110.000	438.000	144.000	437.500	190.000	437.500	215.000	438.000	228.000
GR	438.000	277.000	437.500	278.000	437.000	279.500	436.000	281.500	435.000	282.500
GR	435.500	286.000	436.000	288.000	436.500	290.000	437.000	292.000	437.500	294.000
GR	438.000	378.000	438.500	436.000	439.000	442.000	439.500	446.000	440.000	452.000
GR	440.500	460.000	441.000	478.000	441.500	502.000	442.000	545.000	442.500	582.000

NC	.110	.110	.070	.700	.900	.000	.000	.000	.000	.000
	SECTION 2A , IMMED D/S HIGHWAY 35 BRIDGE									
X1	4478.000	27.000	5.100	19.700	10.000	10.000	10.000	.000	.000	.000
X3	10.000	435.300	.000	.000	.000	.000	.000	439.950	439.930	.000
GR	439.950	.000	439.950	.800	439.950	1.200	437.560	1.300	436.000	5.100
GR	436.120	7.000	435.400	10.000	435.220	12.600	435.230	15.100	439.450	15.110
GR	439.450	15.400	435.230	15.410	435.370	16.600	435.850	18.400	436.600	19.700
GR	437.820	24.400	439.450	24.410	439.450	24.700	437.820	24.710	438.300	29.900
GR	438.650	31.300	439.930	31.400	439.930	32.400	439.930	32.900	439.930	34.600
GR	439.930	36.900	442.000	216.000	.000	.000	.000	.000	.000	.000
SB	1.250	1.560	2.600	.000	15.000	.430	89.400	1.848	.000	.000
	SECTION 2B , IMMED U/S HIGHWAY 35 BRIDGE									
X1	4494.000	.000	.000	.000	16.000	16.000	16.000	.000	.000	.000
X2	.000	.000	1.000	439.440	439.930	.000	.000	2.000	.000	.000
X3	10.000	435.400	.000	.000	.000	.000	.000	439.950	439.930	.000
BT	27.000	.000	439.950	439.950	.800	439.950	439.950	1.200	439.950	439.950
BT	1.300	439.950	439.460	5.100	439.950	439.460	7.000	439.950	439.950	10.000
BT	439.950	439.460	12.600	439.940	439.450	15.100	439.940	439.450	15.110	439.940
BT	439.450	15.400	439.940	439.450	15.410	439.940	439.450	16.600	439.940	439.450
BT	18.400	439.940	439.450	19.700	439.940	439.450	24.400	439.940	439.450	24.410
BT	439.940	439.450	24.700	439.940	439.450	24.710	439.940	439.450	29.900	439.930
BT	439.440	31.300	439.930	439.440	31.400	439.930	439.930	32.400	439.930	439.930
BT	32.900	439.930	439.930	34.600	439.930	439.930	36.900	439.930	439.930	216.000
BT	442.000	442.000	.000	.000	.000	.000	.000	.000	.000	.000
NC	.070	.070	.070	.500	.700	.000	.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	1.200	198.100
	SYNTHETIC X-SEC (E2) LOCATED 10 m. U/S HIGHWAY 35 BRIDGE									
X1	4504.000	16.000	113.000	125.000	10.000	10.000	10.000	.000	.000	.000
GR	440.000	.000	439.500	1.000	439.000	2.000	438.500	4.500	438.000	10.000
GR	438.000	110.000	437.500	113.000	437.000	114.000	436.000	116.000	435.000	118.000
GR	435.000	120.000	437.500	125.000	438.000	135.000	438.500	138.000	439.000	196.000
GR	439.900	200.000	.000	.000	.000	.000	.000	.000	.000	.000
NC	.070	.070	.070	.500	.700	.000	.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	112.000	218.000
	SECTION 3A , 134 m. U/S HIGHWAY 35 BRIDGE									
X1	4628.000	50.000	125.500	134.600	134.000	108.000	124.000	.000	.000	.000
GR	444.000	.000	444.000	69.000	443.500	77.000	443.000	80.000	442.500	82.000
GR	442.000	85.500	441.500	92.000	441.000	100.000	440.500	102.000	440.000	104.000
GR	439.500	106.000	439.000	110.000	438.730	111.000	437.710	115.500	437.760	125.500
GR	435.900	126.900	435.970	129.500	436.070	131.900	436.480	134.600	437.670	144.600
GR	437.500	146.400	437.450	155.200	437.490	161.700	437.570	171.300	438.290	178.200
GR	439.000	211.500	439.500	214.000	440.000	223.000	440.000	230.000	440.000	233.000
GR	440.000	235.000	440.000	241.000	440.000	244.000	440.000	246.500	440.000	249.000
GR	440.000	251.500	440.000	255.500	440.000	278.000	440.000	308.000	440.000	314.000
GR	440.000	316.000	440.000	318.500	440.000	321.000	440.500	330.000	441.000	340.000
GR	441.500	358.000	442.000	415.500	442.500	451.000	443.000	469.000	443.500	481.000

NC	.070	.070	.070	.500	.700	.000	.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	117.800	223.000
	SECTION 3B , 48 m. D/S GRID ROAD BRIDGE									
X1	4638.000	53.000	129.500	139.500	10.000	10.000	10.000	.000	.000	.000
GR	444.000	.000	444.000	25.000	443.500	45.000	443.000	53.000	443.500	61.000
GR	443.500	78.000	443.000	80.000	442.500	83.000	442.000	87.500	441.500	94.000
GR	441.000	110.500	440.500	114.500	440.000	115.500	439.500	117.000	439.000	118.000
GR	438.500	120.000	438.000	128.000	437.500	129.500	435.900	132.000	435.970	134.500
GR	436.070	135.500	436.480	136.500	437.500	139.500	438.000	141.000	438.500	143.500
GR	438.500	154.500	438.500	174.500	438.500	181.500	438.500	184.500	439.000	217.000
GR	439.500	219.500	439.500	236.500	439.500	238.000	439.500	240.500	439.500	247.000
GR	439.500	249.500	439.500	251.500	439.500	254.500	439.500	259.500	439.500	284.000
GR	439.500	296.500	439.500	309.000	439.500	314.000	439.500	317.000	439.500	320.000
GR	440.000	323.000	440.500	331.000	441.000	338.000	441.500	352.000	442.000	406.000
GR	442.500	449.500	443.000	468.000	443.500	481.000	.000	.000	.000	.000
NC	.070	.070	.070	.500	.700	.000	.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	111.600	248.000
	SYNTHETIC X-SEC (E3) LOCATED 10 m. D/S GRID ROAD BRIDGE									
X1	4676.000	26.000	154.000	164.000	38.000	38.000	46.000	.000	.000	.000
GR	444.500	.000	444.000	7.000	443.500	24.000	443.000	48.000	442.500	70.000
GR	442.000	85.000	441.500	96.000	441.000	108.000	440.500	110.000	440.000	111.000
GR	439.500	111.500	439.000	114.000	438.000	146.000	437.500	150.000	435.000	154.000
GR	435.000	159.000	435.500	162.000	436.000	163.000	436.500	164.000	437.000	174.000
GR	437.000	205.000	437.500	214.000	437.500	240.000	438.000	242.000	438.500	244.000
GR	439.800	249.000	.000	.000	.000	.000	.000	.000	.000	.000
NC	.070	.070	.075	.700	.900	.000	.000	.000	.000	.000
	SECTION 4A , IMMED D/S GRID ROAD BRIDGE									
X1	4686.000	24.000	78.900	96.600	10.000	10.000	10.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	439.980	439.900	.000
GR	442.500	.000	440.000	73.300	439.980	78.900	437.150	79.000	437.360	81.400
GR	435.500	83.900	435.290	85.300	439.430	85.310	439.430	85.600	435.290	85.610
GR	435.300	87.200	435.460	88.800	436.560	91.200	439.400	91.210	439.400	91.500
GR	436.560	91.510	437.670	96.600	439.680	96.700	439.830	100.600	439.790	102.300
GR	439.740	105.400	439.680	110.500	440.000	260.500	442.500	344.500	.000	.000
SB	1.250	1.560	2.600	.000	7.000	.510	51.400	1.341	.000	.000
	SECTION 4B , IMMED U/S GRID ROAD BRIDGE									
X1	4700.000	.000	.000	.000	14.000	14.000	14.000	.000	.000	.000
X2	.000	.000	1.000	439.430	439.680	.000	.000	2.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	439.980	439.680	.000
BT	24.000	.000	442.500	442.500	73.300	440.000	440.000	78.900	439.980	439.980
BT	79.000	439.980	439.430	81.400	439.980	439.430	83.900	439.980	439.330	85.300
BT	439.980	439.430	85.310	439.980	439.430	85.600	439.980	439.430	85.610	439.980
BT	439.430	87.200	439.980	439.430	88.800	439.970	439.420	91.200	439.950	439.400
BT	91.210	439.950	439.400	91.500	439.950	439.400	91.510	439.950	439.400	96.600
BT	439.900	439.350	96.700	439.900	439.900	100.600	439.830	439.830	102.300	439.790
BT	439.790	105.400	439.740	439.740	110.500	439.680	439.680	260.500	440.000	440.000
BT	344.500	442.500	442.500	.000	.000	.000	.000	.000	.000	.000

NC	.110	.110	.070	.500	.700	.000	.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	16.500	290.000
	SYNTHETIC X-SEC (E4) LOCATED 40 m. U/S GRID ROAD BRIDGE									
X1	4740.000	46.000	120.000	127.500	40.000	40.000	40.000	.000	.000	.000
GR	443.500	.000	443.000	3.000	442.500	4.500	442.000	5.500	441.500	7.500
GR	441.000	9.000	440.500	11.500	440.000	14.000	439.500	16.500	439.000	22.500
GR	438.500	38.500	438.500	59.500	438.500	95.000	438.500	96.000	438.500	101.500
GR	438.000	112.500	437.500	114.000	437.000	117.000	436.660	120.000	435.730	121.500
GR	435.180	123.500	436.500	127.500	437.000	129.000	437.500	129.500	438.000	134.000
GR	438.500	166.000	438.500	195.500	438.300	264.500	438.500	286.000	439.000	287.500
GR	439.500	290.000	439.500	303.500	439.500	307.500	439.500	309.000	439.500	319.000
GR	439.500	336.000	439.500	385.000	439.500	393.000	439.500	398.500	440.000	406.000
GR	440.500	413.500	441.000	421.500	441.500	428.500	442.000	439.500	442.500	454.500
GR	443.000	498.500	.000	.000	.000	.000	.000	.000	.000	.000
NC	.110	.110	.070	.100	.300	.000	.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	16.500	381.800
	SECTION 4C , 100 m. U/S GRID ROAD BRIDGE									
X1	4800.000	.000	.000	.000	60.000	60.000	60.000	.000	.000	.000
NC	.110	.110	.070	.300	.500	.000	.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	121.600	266.000
	SECTION 5 , 500 m. U/S GRID ROAD BRIDGE									
X1	5170.000	57.000	245.100	260.000	364.000	356.000	370.000	.000	.000	.000
GR	444.200	.000	444.000	3.000	443.500	6.000	443.000	8.000	443.000	9.000
GR	443.000	10.000	443.000	12.500	443.000	15.500	443.000	25.000	443.000	38.000
GR	443.000	42.000	443.000	56.000	443.000	59.500	443.000	67.000	443.000	74.000
GR	443.000	108.000	442.500	114.000	442.000	116.000	441.500	117.000	441.000	118.000
GR	440.500	119.000	440.000	120.500	439.500	122.200	439.000	128.000	439.000	138.500
GR	439.000	155.000	439.000	164.500	439.000	175.500	439.000	181.000	439.000	204.000
GR	439.000	217.000	439.000	220.000	439.000	225.000	439.000	232.000	438.780	233.300
GR	438.660	241.300	437.930	245.100	436.660	249.100	435.730	252.600	435.180	257.800
GR	436.930	258.700	437.590	260.000	439.160	261.900	439.350	264.900	440.020	267.000
GR	440.030	268.500	441.000	271.000	441.500	279.000	442.000	296.000	442.500	307.500
GR	443.000	325.500	443.500	356.000	443.500	428.000	443.000	429.500	443.000	442.500
GR	443.500	444.500	443.780	452.000	.000	.000	.000	.000	.000	.000
NC	.110	.110	.070	.500	.700	.000	.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	508.000	555.000
	SECTION 6 , 220 m. D/S OLD HIGHWAY 35 BRIDGE									
X1	5500.000	74.000	531.600	537.600	296.000	326.000	330.000	.000	.000	.000
GR	447.500	.000	447.500	76.000	447.000	91.000	446.500	131.000	446.000	162.000
GR	446.000	186.000	446.000	215.500	446.000	250.000	446.000	276.000	446.000	281.000
GR	446.000	288.000	446.000	291.000	446.000	304.500	446.000	313.500	446.000	314.500
GR	446.000	331.000	446.000	340.000	446.000	346.000	446.000	352.000	446.000	359.000
GR	446.000	362.500	446.000	370.000	446.000	376.000	446.000	377.500	446.000	381.000
GR	446.000	383.000	446.000	388.500	446.000	395.500	446.000	402.000	446.000	404.000
GR	446.000	408.000	446.000	431.000	445.500	451.000	445.000	457.000	444.500	462.000
GR	444.000	468.000	443.500	472.500	443.000	478.000	442.500	480.000	442.000	481.500
GR	441.500	487.000	441.000	490.500	440.500	499.000	440.600	508.000	439.370	518.000
GR	437.560	523.000	437.890	525.300	437.070	531.600	437.130	532.500	437.120	533.600
GR	437.530	535.500	438.160	536.400	439.570	537.600	439.610	540.000	439.380	549.500
GR	441.000	556.000	441.010	556.000	442.500	576.000	444.000	585.900	444.860	595.800

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GR   445.100   598.000   446.000   634.500   446.500   655.800   447.000   675.000   447.000   774.000
GR   447.000   819.500   447.000   830.000   446.500   906.000   446.500   964.500   446.500   971.500
GR   446.500   989.000   447.000   992.000   447.500   994.000   447.500  1009.000      .000      .000

NC      .110      .110      .070      .500      .700      .000      .000      .000      .000      .000
ET      .000      .000     9.100      .000      .000      .000      .000      .000    23.600   105.400
          SYNTHETIC X-SEC (E5) LOCATED 10 m. D/S HIGHWAY 35 BRIDGE
X1  5702.000    21.000    70.000    90.000   174.000   200.000   202.000      .000      .800      .000
GR   442.500      .000   442.000    16.000   441.500    18.000   441.000    22.000   440.500    26.000
GR   440.000    60.000   439.000    64.000   437.500    70.000   437.200    80.000   437.500    90.000
GR   439.000    92.000   440.000    94.000   440.500    95.000   441.000   108.000   441.500   118.000
GR   442.000   124.000   442.000   142.000   443.000   148.000   443.500   161.000   444.000   164.000
GR   445.000   230.000      .000      .000      .000      .000      .000      .000      .000      .000

NC      .110      .110      .070      .500      .700      .000      .000      .000      .000      .000
          SECTION 7A , IMMED D/S OLD HIGHWAY 35 BRIDGE
X1  5712.000    16.000    11.300    27.400    10.000    10.000    10.000      .000      .000      .000
X3    10.000      .000      .000      .000      .000      .000      .000   442.410   442.380      .000
GR   442.580      .000   442.470     7.700   442.440     9.200   442.430     9.500   442.410    11.200
GR   439.050    11.300   438.170    13.900   437.990    15.500   437.970    19.100   438.330    20.400
GR   439.100    22.900   439.940    24.100   440.670    27.400   442.380    27.500   442.480    30.300
GR   442.650    38.000      .000      .000      .000      .000      .000      .000      .000      .000

SB      .950     1.230     2.600      .000     7.700      .000    44.000     1.050      .000      .000
          SECTION 7B , IMMED U/S OLD HIGHWAY 35 BRIDGE
X1  5726.000      .000      .000      .000    14.000    14.000    14.000      .000      .000      .000
X2      .000      .000     1.000   441.930   442.380      .000      .000      .000      .000      .000
X3    10.000      .000      .000      .000      .000      .000      .000   442.310   442.380      .000
BT    16.000      .000   442.580   442.580     7.700   442.470   442.470     9.200   442.440   442.440
BT     9.500   442.430   442.430    11.200   442.410   442.410    11.300   442.410   441.960    13.900
BT   442.400   441.950    15.500   442.400   441.950    19.100   442.390   441.940    20.400   442.390
BT   441.940    22.900   442.390   441.940    24.100   442.380   441.930    27.400   442.380   441.930
BT    27.500   442.380   442.380    30.300   442.480   442.480    38.000   442.650   442.650      .000

NC      .110      .110      .065      .300      .500      .000      .000      .000      .000      .000
ET      .000      .000     9.100      .000      .000      .000      .000      .000    64.400   130.000
          SYNTHETIC X-SEC (E6) LOCATED 10 m. U/S OLD HIGHWAY 35 BRIDGE
X1  5736.000    15.000    83.000    95.000    10.000    10.000    10.000      .000      .800      .000
GR   442.500      .000   442.000    22.000   441.500    75.000   441.000    77.000   440.500    78.000
GR   440.000    82.000   438.500    83.000   437.500    84.500   437.200    89.800   437.500    94.000
GR   438.500    95.000   440.000    96.000   442.000    98.000   442.500   138.000   445.000   210.000

NC      .110      .110      .065      .300      .500      .000      .000      .000      .000      .000
ET      .000      .000     9.100      .000      .000      .000      .000      .000   277.000   450.000
          SECTION 8 ,  500 m. U/S OLD HIGHWAY 35 BRIDGE
X1  6136.000    60.000   423.500   434.000   372.000   402.000   400.000      .000      .000      .000
GR   450.500      .000   450.000    38.000   449.500    84.500   449.000   134.000   448.500   173.500
GR   448.000   204.000   447.500   207.000   447.000   227.000   446.500   236.500   446.000   241.500
GR   445.500   249.500   445.000   254.500   444.500   259.000   444.000   262.500   443.500   268.000
GR   443.000   271.500   442.500   276.000   442.000   281.500   441.500   290.500   441.500   327.000
GR   442.000   342.000   442.000   352.000   441.500   358.000   441.500   387.000   441.160   405.000
GR   441.260   415.000   440.260   423.500   438.890   425.400   438.640   427.000   439.000   428.800
GR   439.140   431.400   439.750   432.900   440.560   434.000   441.390   440.900   444.040   449.000
GR   446.400   454.000   445.880   461.100   446.000   465.000   446.500   471.500   446.500   482.500
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GR	446.000	485.000	446.000	492.000	446.000	520.500	446.000	541.000	446.000	590.000
GR	446.000	619.000	446.500	672.000	447.000	704.000	447.500	749.000	448.000	767.000
GR	448.000	896.000	447.500	932.000	447.000	954.500	446.500	1050.000	446.500	1058.000
GR	446.500	1092.500	446.500	1100.000	447.000	1102.000	447.500	1104.000	447.800	1109.000
NC	.110	.110	.065	.300	.500	.000	.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	38.700	171.400
	SECTION 9 , SEWAGE TREATMENT PLANT - PUMPING STATION									
X1	6656.000	49.000	141.700	152.000	480.000	540.000	520.000	.000	.000	.000
GR	448.000	.000	447.500	7.500	447.000	14.000	446.500	18.500	446.000	22.000
GR	445.500	24.500	445.000	27.500	444.500	31.000	444.000	33.000	443.500	36.500
GR	443.000	38.500	442.500	41.500	442.500	88.000	442.210	106.000	442.210	116.000
GR	442.210	123.000	442.230	130.000	442.200	134.000	441.190	140.600	440.110	141.700
GR	439.480	142.900	439.540	144.100	439.750	147.000	439.730	148.700	440.100	150.400
GR	440.570	152.000	442.020	161.400	442.850	171.400	443.680	176.600	444.260	179.900
GR	447.480	187.600	447.500	190.000	448.000	208.500	448.500	232.000	448.500	240.500
GR	448.500	254.000	449.000	276.000	449.500	299.500	450.000	334.000	450.000	356.000
GR	449.500	383.000	449.000	413.000	449.500	461.000	448.000	500.000	448.000	552.000
GR	448.000	590.500	447.500	702.000	447.500	760.000	447.500	764.000	.000	.000
NC	.110	.110	.065	.300	.500	.000	.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	290.800	474.000
	SECTION 10 , ALLEY - 109 th. AVENUE									
X1	7480.000	70.000	462.900	471.000	750.000	804.000	824.000	.000	.000	.000
GR	450.600	.000	450.500	18.500	450.000	37.500	449.500	53.500	449.000	124.000
GR	448.500	187.500	448.000	193.000	448.000	197.000	448.000	199.000	448.000	200.000
GR	448.000	201.000	448.000	203.000	448.000	204.000	448.000	206.500	448.000	208.500
GR	448.000	211.000	448.000	212.500	448.000	253.000	448.000	256.000	448.000	257.000
GR	448.000	258.500	448.000	260.000	448.000	262.500	448.000	263.500	448.000	266.500
GR	447.500	267.000	447.500	270.000	448.000	272.000	448.000	283.000	447.500	284.000
GR	447.000	285.000	446.000	286.000	445.000	286.500	444.500	288.000	444.000	290.500
GR	443.500	291.500	443.000	293.000	442.500	380.000	442.500	388.500	442.500	453.000
GR	442.600	455.000	441.820	460.600	442.330	462.900	441.390	464.900	440.940	465.700
GR	440.410	467.000	440.430	468.400	441.290	469.400	442.250	471.000	443.460	473.100
GR	443.840	476.000	444.730	479.300	444.790	480.900	445.000	509.500	445.500	512.500
GR	446.000	516.000	446.500	527.000	447.000	551.500	447.000	563.000	447.000	565.000
GR	447.000	568.000	447.000	574.000	447.000	576.000	447.000	578.500	447.500	590.000
GR	447.500	600.000	447.800	612.500	448.000	678.500	448.500	747.500	448.900	813.500
NC	.110	.110	.065	.100	.300	.000	.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	659.300	824.600
	SECTION 11 , 150 m. D/S GOLF COURSE BRIDGE									
X1	8224.000	47.000	659.400	672.600	636.000	610.000	744.000	.000	.000	.000
GR	450.000	.000	449.500	82.000	449.500	162.000	449.000	250.000	448.500	357.000
GR	448.500	381.000	448.500	391.000	448.000	480.000	448.070	491.000	448.000	569.500
GR	447.750	592.000	447.000	613.000	446.500	622.500	446.000	629.000	445.500	638.500
GR	445.000	643.000	445.240	655.900	444.430	659.400	442.370	661.200	440.990	663.900
GR	440.980	665.700	441.240	668.200	442.440	670.800	443.240	672.600	443.640	675.200
GR	444.000	678.000	444.000	707.000	444.000	720.000	444.000	743.000	444.000	779.000
GR	444.000	785.000	444.000	813.000	444.000	815.000	444.000	819.000	444.500	825.500
GR	445.000	831.500	445.000	857.000	445.000	864.000	445.000	870.000	445.000	875.500
GR	445.500	893.000	446.000	896.500	446.500	907.000	447.000	921.000	447.500	959.000
GR	447.500	994.500	447.500	998.400	.000	.000	.000	.000	.000	.000

NC	.110	.110	.065	.100	.300	.000	.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	118.800	272.400
	SYNTHETIC X-S[illegible] (E7) LOCATED 10 m. D/S GOLF COURSE BRIDGE									
X1	8462.000	19.000	167.100	181.000	180.000	232.000	238.000	.000	.000	.000
GR	447.500	.000	447.000	70.000	446.500	88.000	446.000	98.000	445.500	106.000
GR	445.000	111.000	444.500	125.000	444.000	167.100	443.500	174.000	443.000	174.800
GR	442.500	176.000	441.000	180.000	442.500	181.000	443.000	185.000	443.500	186.000
GR	444.000	188.000	444.500	246.000	445.000	310.000	447.500	360.000	.000	.000
NC	.073	.073	.065	.300	.500	.000	.000	.000	.000	.000
	SECTION 12A , IMMED D/S GOLF COURSE BRIDGE - 105 th. AVENUE									
X1	8472.000	24.000	167.100	174.800	10.000	10.000	10.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	[illegible]000	445.120	445.130	.000
GR	447.550	.000	444.920	156.400	445.000	159.400	445.070	162.800	443.640	162.900
GR	444.070	165.400	442.190	167.100	444.600	167.110	444.600	167.400	442.190	167.410
GR	440.930	172.100	440.920	174.800	444.610	174.810	444.610	175.100	440.920	175.110
GR	441.700	178.000	442.720	179.100	443.210	180.500	445.110	180.600	445.050	182.600
GR	444.860	189.600	445.000	265.600	447.500	375.600	448.000	391.600	.000	.000
SB	1.050	1.560	2.600	.000	8.000	.570	49.900	1.288	.000	.000
	SECTION 12B , IMMED U/S GOLF COURSE BRIDGE - 105 th. AVENUE									
X1	8484.000	.000	.000	.000	12.000	12.000	12.000	.000	.000	.000
X2	.000	.000	1.000	444.610	439.860	.000	[illegible]000	2.000	[illegible]000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	445.120	445.130	.000
BT	24.000	.000	447.500	447.500	156.400	444.920	444.920	159.400	445.000	445.000
BT	162.800	445.070	445.070	162.900	445.070	444.550	165.400	445.110	444.590	167.100
BT	445.120	444.600	167.110	445.120	444.600	167.400	445.120	444.600	167.410	445.120
BT	444.600	172.100	445.130	444.610	174.800	445.130	444.610	174.810	445.130	444.610
BT	175.100	445.130	444.610	175.110	445.130	444.610	178.000	445.110	444.600	179.100
BT	445.110	444.600	180.500	445.110	444.600	180.600	445.110	444.600	182.600	445.050
BT	445.050	189.600	444.860	444.860	265.600	445.000	445.000	375.600	447.500	447.500
BT	375.600	448.000	448.000	.000	.000	.000	.000	[illegible]000	.000	.000
NC	.110	.110	.073	.500	.700	.000	.000	[illegible]000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	[illegible]000	44.400	307.400
	SYNTHETIC X-SEC (E8) LOCATED 10 m. U/S GOLF COURSE BRIDGE									
X1	8494.000	27.000	184.000	205.000	10.000	10.000	10.000	.000	.000	.000
GR	447.500	.000	445.500	30.000	445.000	36.000	444.500	78.000	444.000	97.000
GR	444.000	122.000	444.000	131.000	444.000	164.000	443.500	174.000	443.500	184.000
GR	443.500	187.000	443.000	187.500	442.500	190.000	441.000	193.500	442.500	197.000
GR	443.000	199.000	443.500	202.000	443.500	205.000	443.500	210.000	444.000	301.000
GR	444.500	305.000	445.000	308.000	445.500	314.000	446.000	322.000	446.500	340.000
GR	447.000	348.000	447.500	354.000	.000	.000	.000	.000	.000	.000
NC	.150	.110	.073	.500	.700	.000	.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	18.100	401.300
	SECTION 12C , 138 m. U/S GOLF COURSE BRIDGE - 105 th. AVENUE									
X1	8622.000	60.000	386.000	394.800	115.000	110.000	128.000	.000	.000	.000
GR	447.500	.000	447.000	5.500	446.500	10.000	446.000	15.000	445.500	17.500
GR	445.000	21.000	444.500	22.000	444.500	47.500	444.500	107.000	444.500	108.000
GR	444.500	116.000	444.500	118.000	444.500	121.000	444.500	179.000	444.500	226.000
GR	444.500	265.500	444.500	267.000	444.500	267.500	444.500	269.000	444.500	273.000
GR	444.500	274.500	444.500	277.000	444.500	295.500	444.500	326.000	444.500	337.000

GR	444.500	351.000	444.000	352.500	443.500	354.500	443.500	355.500	443.500	358.500
GR	443.500	359.500	443.500	361.000	443.500	362.500	444.000	363.500	444.000	384.000
GR	443.500	386.000	443.000	387.500	442.500	389.000	442.190	390.500	441.550	392.000
GR	441.860	393.000	442.500	394.000	443.000	394.800	443.500	396.000	444.500	397.000
GR	445.000	398.000	445.500	400.000	446.000	410.000	446.500	426.000	447.000	442.000
GR	447.500	454.000	448.500	526.000	449.000	578.000	449.500	625.000	449.600	700.500
GR	449.500	709.000	449.200	817.000	449.200	875.000	449.300	956.500	449.300	1049.500
NC	.150	.110	.073	.500	.700	.000	.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	160.000	440.000

SECTION 13 , 103 rd. AVENUE AT RCMP STATION

X1	8922.000	45.000	424.700	440.000	309.000	296.000	300.000	.000	.000	.000
GR	449.000	.000	449.000	15.500	448.500	59.000	448.000	68.000	447.500	76.000
GR	447.000	84.500	446.500	95.500	446.000	102.500	445.500	127.000	445.500	142.000
GR	445.000	171.000	445.000	175.000	445.000	283.500	444.500	287.000	444.500	292.000
GR	444.500	300.000	444.500	309.000	444.500	397.000	444.360	412.000	444.710	421.900
GR	444.010	424.700	443.770	428.000	442.190	430.500	441.590	432.000	441.860	433.500
GR	443.270	435.100	444.530	437.200	445.970	440.000	446.660	449.700	446.730	455.000
GR	447.000	458.000	447.500	472.500	448.000	497.000	448.500	520.000	449.000	536.500
GR	449.500	552.000	449.600	558.500	449.500	650.500	449.400	684.000	449.200	778.500
GR	449.300	859.000	449.500	883.500	449.600	915.000	449.700	973.500	449.800	1033.500
NC	.150	.110	.073	.500	.700	.000	.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	281.500	400.700

SECTION 14 , 120 m. D/S CNR BRIDGE

X1	9198.000	51.000	384.000	400.700	266.000	268.000	276.000	.000	.000	.000
GR	449.500	.000	449.000	2.000	449.000	35.500	449.000	45.500	449.000	53.000
GR	449.000	59.000	449.000	67.000	449.000	73.000	449.000	79.500	449.000	81.500
GR	449.000	92.000	449.000	97.000	449.000	106.000	449.000	112.500	449.000	123.500
GR	449.000	236.000	448.500	250.000	448.000	259.000	447.500	263.000	447.000	269.000
GR	446.500	276.500	446.000	279.500	445.500	283.000	445.000	331.000	445.000	340.000
GR	445.000	349.000	444.900	384.000	444.330	385.900	443.630	387.300	443.280	388.200
GR	442.730	389.600	442.480	391.800	442.500	394.400	443.450	396.100	445.260	398.300
GR	446.060	400.700	448.810	406.000	449.450	410.700	449.570	412.700	449.700	444.000
GR	449.500	480.000	449.400	498.000	449.200	560.500	449.500	626.000	449.700	669.000
GR	450.000	713.000	450.500	785.000	451.000	842.000	451.000	859.000	451.500	883.000
GR	451.900	958.000	.000	.000	.000	.000	.000	.000	.000	.000
NC	.150	.110	.073	.500	.700	.000	.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	292.000	372.000

SYNTHETIC X-SEC (E9) LOCATED 8 m. D/S CNR BRIDGE

X1	9308.000	31.000	354.000	371.000	96.000	114.000	108.000	.000	.000	.000
GR	450.000	.000	449.500	4.000	449.000	6.000	448.500	15.000	448.000	22.000
GR	447.500	44.000	447.500	92.000	447.500	218.000	447.580	234.000	447.000	255.000
GR	446.500	266.000	446.000	292.000	445.500	352.000	445.000	354.000	444.500	354.500
GR	444.000	356.000	443.500	359.000	442.500	360.000	442.500	362.000	442.500	364.000
GR	442.500	366.000	445.000	371.000	446.000	372.000	446.500	374.000	447.000	376.000
GR	447.500	377.000	448.000	378.000	448.500	378.500	449.000	380.000	449.500	381.000
GR	450.000	460.000	.000	.000	.000	.000	.000	.000	.000	.000

NC	.150	.110	.075	.500	.700	.000	.000	.000	.000	.000
	SECTION 15A , IMMED D/S CNR BRIDGE									
X1	9316.000	24.000	5.400	53.100	10.000	10.000	10.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	450.340	450.410	.000
GR	450.340	.000	450.350	5.000	449.690	5.400	449.230	5.500	448.230	11.600
GR	445.060	17.300	443.780	19.400	443.450	22.200	442.830	25.800	449.720	25.810
GR	449.720	31.500	442.830	31.510	442.870	32.500	443.770	34.200	444.230	36.800
GR	444.330	38.000	443.900	39.700	444.110	42.300	445.380	45.800	447.770	49.300
GR	449.050	52.900	449.770	53.100	450.430	53.200	450.440	60.000	.000	.000
SB	1.250	2.000	2.600	.000	16.500	3.700	100.000	.154	.000	.000
	SECTION 15B , IMMED U/S CNR BRIDGE									
X1	9324.000	.000	.000	.000	8.000	8.000	8.000	.000	.000	.000
X2	.000	.000	1.000	449.690	450.340	.000	.000	2.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	450.340	450.410	.000
BT	21.000	.000	450.340	450.340	5.000	450.350	450.350	5.400	450.350	449.690
BT	5.500	450.350	449.690	11.600	450.360	449.700	17.300	450.370	449.710	19.400
BT	450.370	449.710	22.200	450.380	449.720	25.800	450.380	449.720	32.500	450.390
BT	449.730	34.200	450.400	449.740	36.800	450.400	449.740	38.000	450.400	449.740
BT	39.700	450.410	449.750	42.300	450.410	449.750	45.800	450.420	449.760	49.300
BT	450.420	449.760	52.900	450.430	449.770	53.100	450.430	449.770	53.200	450.430
BT	450.430	60.000	450.440	450.440	.000	.000	.000	.000	.000	.000
NC	.150	.150	.075	.300	.500	.000	.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	254.100	404.100
	SYNTHETIC X-SEC (E10) LOCATED 12 m. U/S CNR BRIDGE									
X1	9336.000	30.000	343.000	360.000	10.000	10.000	10.000	.000	.000	.000
GR	450.000	.000	449.500	4.500	449.000	6.000	448.500	12.000	448.000	19.000
GR	447.500	60.000	447.500	249.000	447.000	252.000	446.500	259.000	446.000	268.000
GR	445.500	315.000	445.000	340.000	444.000	343.000	443.500	346.000	443.000	346.500
GR	442.500	348.000	442.500	350.000	442.500	355.000	442.500	360.000	445.000	366.000
GR	445.500	368.000	446.000	385.000	446.500	399.000	447.000	406.000	447.500	411.000
GR	448.000	418.000	448.500	423.000	449.000	436.000	449.500	474.000	450.000	510.000
NC	.150	.150	.075	.100	.300	.000	.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	247.400	385.200
	SECTION 16 , 300 m. U/S CNR BRIDGE									
X1	9520.000	57.000	365.000	375.000	276.000	270.000	280.000	.000	.000	.000
GR	450.000	.000	450.000	4.000	450.000	5.500	450.000	7.000	450.000	16.000
GR	450.000	42.000	450.000	55.000	450.000	82.000	450.000	140.500	450.400	191.500
GR	450.000	216.000	449.500	221.000	449.000	228.000	448.500	237.000	448.000	240.000
GR	447.500	243.000	447.000	245.000	446.500	248.000	446.000	249.500	446.000	273.000
GR	446.000	285.000	445.500	289.000	445.500	311.000	445.500	320.000	445.270	358.000
GR	445.020	362.800	444.670	365.000	443.380	367.100	443.410	368.000	443.340	369.400
GR	443.190	371.300	443.280	373.700	444.090	374.500	444.510	375.000	445.810	378.200
GR	446.500	384.200	447.600	394.200	448.480	404.200	448.600	406.700	449.000	413.000
GR	449.500	429.000	450.000	457.000	450.000	509.000	450.000	513.500	450.000	522.000
GR	449.500	523.000	449.500	527.000	450.000	531.000	450.500	633.500	451.000	646.000
GR	451.500	655.000	452.000	801.000	452.500	809.500	453.000	816.000	453.000	861.500
GR	453.000	884.000	453.100	891.000	.000	.000	.000	.000	.000	.000

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NC      .150      .150      .075      .100      .300      .000      .000      .000      .000      .000
ET      .000      .000     9.100      .000      .000      .000      .000      .000   164.800   334.000
        SECTION 17A  , 200 m. D/S WALKING BRIDGE
X1   9998.000    35.000   208.500   218.000   708.000   645.000   717.000      .000      .000      .000
GR    451.050      .000   450.500    20.000   450.000    70.000   449.500   151.000   449.000   157.000
GR    449.000   160.000   448.000   163.000   447.500   165.000   447.000   166.000   446.500   168.000
GR    446.000   169.000   445.500   206.000   445.000   207.500   444.000   208.500   443.000   210.000
GR    442.500   211.000   442.500   213.300   442.500   215.500   443.000   216.000   444.000   218.000
GR    445.000   219.000   445.500   221.000   446.000   222.500   446.500   236.000   446.500   294.000
GR    447.000   305.000   447.000   328.000   447.500   333.000   448.000   336.000   448.500   339.000
GR    449.000   346.000   449.500   347.000   450.000   352.000   450.000   404.000   450.400   430.000

NC      .150      .150      .075      .100      .300      .000      .000      .000      .000      .000
ET      .000      .000     9.100      .000      .000      .000      .000      .000   140.000   326.000
        SYNTHETIC X-SEC (E11) LOCATED 18 m. D/S WALKING BRIDGE
X1  10180.000    30.000   183.000   190.000   275.000   275.000   285.000      .000      .000      .000
GR    451.100      .000   450.500     6.000   450.000   111.000   449.500   122.000   449.000   135.500
GR    448.500   136.000   448.000   138.000   447.500   140.000   447.000   141.000   446.500   142.000
GR    446.000   145.000   445.500   178.000   445.000   179.000   442.500   183.000   442.500   185.000
GR    442.500   187.000   442.500   190.000   445.000   193.000   445.500   194.000   446.000   195.000
GR    446.000   231.000   446.500   304.000   447.000   322.000   447.500   326.000   448.000   327.000
GR    448.500   328.000   449.000   350.000   449.500   381.000   450.000   383.000   450.400   418.000

NC      .150      .150      .075      .100      .300      .000      .000      .000      .000      .000
        SECTION 17B , IMMED D/S WALKING BRIDGE
X1  10198.000    19.000   111.200   126.600    10.000    10.000    10.000      .000      .000      .000
X3     10.000      .000      .000      .000      .000      .000      .000   448.100   448.010      .000
GR    450.000      .000   448.200    99.300   448.100   106.300   448.150   110.100   448.160   111.200
GR    447.700   111.300   445.460   111.400   444.570   114.000   443.730   115.200   443.470   116.600
GR    443.220   118.700   443.260   121.100   443.190   123.200   444.540   125.900   444.900   126.600
GR    448.010   126.700   448.010   126.800   449.000   296.800   450.000   334.000      .000      .000

SB      .950     1.560     2.600      .000     8.100      .000    57.500      .768      .000      .000
        SECTION 17C , IMMED U/S WALKING BRIDGE
X1  10204.000      .000      .000      .000     6.000     6.000     6.000      .000      .000      .000
X2      .000      .000     1.000   447.770   448.010      .000      .000     1.330      .000      .000
X3     10.000      .000      .000      .000      .000      .000      .000   448.100   448.010      .000
BT     19.000      .000   450.000   450.000    99.300   448.200   448.200   106.300   448.100   448.100
BT    110.100   448.150   448.150   111.200   448.160   448.160   111.300   448.160   448.160   111.400
BT    448.160   447.770   114.000   448.140   447.750   115.200   448.120   447.730   116.600   448.110
BT    447.720   118.700   448.100   447.710   121.100   448.080   447.690   123.200   448.060   447.670
BT    125.900   448.030   447.640   126.600   448.010   447.620   126.700   448.010   448.010   126.800
BT    448.010   448.010   296.800   449.000   449.000   334.000   450.000   450.000      .000      .000

NC      .110      .110      .070      .100      .300      .000      .000      .000      .000      .000
ET      .000      .000     9.100      .000      .000      .000      .000      .000   147.000   317.000
        SYNTHETIC X-SEC (E12) LOCATED 10 m. U/S WALKING BRIDGE
X1  10214.000    25.000   178.000   222.000    10.000    10.000    10.000      .000      .000      .000
GR    450.700      .000   450.500    22.000   450.000    40.000   449.500    71.000   449.000    96.000
GR    448.500   119.000   448.000   138.000   447.500   149.000   447.000   156.000   446.500   158.000
GR    446.000   166.000   445.500   175.000   445.000   178.000   442.500   185.000   442.500   194.000
GR    442.500   200.000   446.500   222.000   446.500   301.000   447.000   311.000   447.500   313.000
GR    448.000   333.000   448.500   342.000   449.000   356.000   449.500   371.000   450.000   400.000
```

NC	.110	.110	.070	.100	.300	.000	.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	16.700	355.000
	SECTION 17D , 289 m. U/S WALKING BRIDGE									
X1	10493.000	38.000	282.500	297.000	270.000	230.000	279.000	.000	.000	.000
GR	451.000	.000	450.500	8.000	450.000	10.000	449.500	12.000	449.000	14.000
GR	448.500	15.000	448.000	17.500	447.500	19.500	447.500	21.000	447.500	24.000
GR	447.500	26.000	447.500	29.000	447.500	37.000	447.500	85.000	447.500	91.000
GR	447.500	94.500	447.500	98.500	446.500	129.000	446.000	204.500	446.000	208.000
GR	445.500	282.000	445.000	282.500	444.500	285.000	444.000	286.500	443.500	289.000
GR	444.000	291.000	444.500	293.500	445.000	297.000	445.500	299.500	447.000	318.000
GR	447.000	336.000	447.500	346.000	448.000	351.000	448.500	362.000	449.000	380.000
GR	449.500	389.000	450.000	414.000	450.400	460.500	.000	.000	.000	.000
NC	.110	.110	.070	.100	.300	.000	.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	16.400	350.200
	SECTION 17E , 54 m. D/S HIGHWAY 3 BRIDGE									
X1	10707.000	44.000	328.500	345.000	210.000	186.000	214.000	.000	.000	.000
GR	451.000	.000	450.500	8.000	450.000	10.500	449.500	12.000	449.000	13.000
GR	448.500	15.000	448.000	16.000	447.500	17.500	447.500	19.000	447.500	20.500
GR	447.500	21.500	447.500	23.000	447.500	25.000	447.500	92.000	447.500	112.000
GR	446.500	126.000	446.500	142.000	446.500	148.000	446.500	153.000	446.500	162.500
GR	446.500	174.000	446.500	183.000	446.500	220.000	446.000	248.500	446.000	255.000
GR	446.000	292.000	446.000	304.000	446.000	328.500	445.500	330.000	445.000	338.000
GR	444.500	339.500	444.500	342.000	445.000	344.000	446.000	345.000	446.500	346.500
GR	447.000	348.000	447.500	350.000	448.000	351.000	448.500	351.500	449.000	352.500
GR	449.500	353.500	450.000	401.000	450.000	407.500	450.000	410.000	.000	.000
NC	.070	.070	.070	.100	.300	.000	.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	24.300	249.700
	SYNTHETIC X-SEC (E13) LOCATED 25 m. D/S HIGHWAY 3 BRIDGE									
X1	10736.000	32.000	328.000	348.000	30.000	44.000	44.000	.000	.000	.000
GR	451.500	.000	451.000	4.000	450.500	12.000	450.000	14.000	449.500	17.000
GR	449.000	20.000	448.500	22.000	448.000	24.000	447.500	28.000	447.000	34.000
GR	446.500	38.000	446.500	84.000	446.000	91.000	446.000	126.000	446.000	256.000
GR	446.000	322.000	445.500	324.000	445.000	328.000	444.500	333.000	443.500	336.000
GR	444.200	337.000	444.200	338.500	444.200	340.000	444.200	342.000	444.200	344.000
GR	445.000	346.000	447.500	348.000	448.000	350.000	448.500	352.000	449.000	354.000
GR	449.500	357.000	450.000	391.000	.000	.000	.000	.000	.000	.000
NC	.070	.070	.070	.300	.500	.000	.000	.000	.000	.000
	SECTION 18A , IMMED D/S HIGHWAY 3 BRIDGE									
X1	10761.000	20.000	193.000	213.300	10.000	10.000	10.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	449.170	449.400	.000
GR	449.500	.000	449.170	190.500	449.190	191.600	445.620	193.000	444.900	195.400
GR	444.200	197.900	448.740	197.910	448.740	198.200	444.200	198.210	444.150	200.500
GR	444.190	202.500	444.580	204.700	448.810	204.710	448.810	205.000	444.580	205.010
GR	446.490	208.100	447.830	213.300	449.400	213.400	449.420	214.400	449.510	221.700

SB	1.250	1.560	2.600	.000	10.000	.540	73.500	1.100	.000	.000
	SECTION 188 , IMMED U/S HIGHWAY 3 BRIDGE									
X1	10778.000	.000	.000	.000	17.000	17.000	17.000	.000	.000	.000
X2	.000	.000	1.000	448.900	449.090	.000	.000	2.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	449.170	449.400	.000
BT	20.000	.000	449.500	449.500	190.500	449.170	449.170	191.600	449.190	449.190
BT	193.000	449.190	448.690	195.400	449.220	448.720	197.900	449.240	448.740	197.910
BT	449.240	448.740	198.200	449.240	448.740	198.210	449.240	448.740	200.500	449.270
BT	448.770	202.500	449.300	448.800	204.700	449.310	448.810	204.710	449.310	448.810
BT	205.000	449.310	448.810	205.010	449.310	448.810	208.100	449.350	448.850	213.300
BT	449.400	448.900	213.400	449.400	449.400	214.400	449.420	449.420	221.700	449.510
BT	449.510	.000	.000	.000	.000	.000	.000	.000	.000	.000
NC	.070	.070	.070	.300	.500	.000	.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	100.900	410.000
	SYNTHETIC X-SEC (E14) LOCATED 20 m. U/S HIGHWAY 3 BRIDGE									
X1	10798.000	28.000	376.000	391.000	10.000	10.000	10.000	.000	.000	.000
GR	451.500	.000	451.000	44.000	450.500	45.000	450.000	50.000	449.500	59.000
GR	449.000	76.000	448.500	112.000	448.000	114.000	447.500	116.000	447.000	118.000
GR	446.500	156.000	446.000	170.000	446.000	320.000	446.000	356.000	446.000	374.000
GR	445.500	376.000	445.000	378.000	444.500	378.500	444.200	380.500	444.200	385.000
GR	444.200	388.000	445.000	391.000	447.500	396.000	448.000	404.000	448.500	410.000
GR	449.000	419.000	449.500	456.000	450.000	475.000	.000	.000	.000	.000
NC	.070	.070	.070	.300	.500	.000	.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	234.000	654.000
	SECTION 19 , 300 m. U/S HIGHWAY 3 BRIDGE									
X1	11084.000	43.000	335.000	352.500	276.000	316.000	296.000	.000	.000	.000
GR	453.000	.000	452.500	59.000	452.000	114.000	451.500	144.000	451.000	173.000
GR	450.500	201.000	450.000	229.500	449.500	231.000	449.000	232.000	448.500	233.500
GR	448.000	236.000	447.500	237.500	447.000	244.000	446.500	253.500	446.500	295.000
GR	446.500	335.000	445.720	337.000	445.030	339.000	444.240	339.700	443.760	341.600
GR	444.070	343.400	444.200	344.800	444.700	346.600	445.700	349.800	446.400	352.500
GR	446.500	417.000	446.500	428.000	447.000	455.000	447.500	482.000	448.000	495.000
GR	448.500	522.000	448.500	540.000	448.000	550.000	448.500	560.000	449.000	563.000
GR	449.000	612.000	448.500	631.000	448.500	636.000	449.000	680.000	449.000	706.500
GR	449.000	742.000	449.500	755.000	450.000	783.000	.000	.000	.000	.000
NC	.110	.110	.070	.100	.300	.000	.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	320.000	563.000
	SECTION 20 , 1300 m. FROM U/S END OF STUDY AREA									
X1	14086.000	58.000	422.000	432.900	2810.000	2744.000	3002.000	.000	.000	.000
GR	451.000	.000	450.500	25.500	450.000	33.400	449.500	41.000	449.000	45.000
GR	448.500	53.500	448.500	93.000	449.000	98.000	449.500	103.000	450.000	110.000
GR	450.500	116.000	451.000	121.500	451.500	129.000	452.000	138.500	452.500	146.000
GR	453.000	172.000	453.000	366.000	452.500	380.500	452.000	388.000	451.500	394.500
GR	451.000	398.500	450.500	404.500	450.000	407.000	449.500	410.000	448.510	412.000
GR	447.560	422.000	446.770	423.300	446.350	424.000	445.900	425.100	445.690	426.200
GR	445.630	427.200	445.670	428.300	446.250	430.000	447.250	431.300	447.450	431.900
GR	447.760	432.900	448.420	440.300	448.700	450.000	448.500	574.000	448.500	577.500
GR	448.500	586.500	448.500	598.000	448.500	631.500	449.000	637.500	449.000	643.500
GR	450.000	646.500	450.500	656.000	451.000	657.500	451.500	661.500	452.000	668.500
GR	452.500	677.500	453.000	690.000	453.500	718.000	454.000	742.000	454.000	786.000

GR	454.000	816.000	454.500	879.000	455.000	984.000	.000	.000	.000	.000
NC	.110	.110	.070	.100	.300	.000	.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	18.000	328.000
	SECTION 21 , MOST UPSTREAM CROSS SECTION									
X1	15286.000	51.000	218.800	229.900	1064.000	866.000	1200.000	.000	.000	.000
GR	454.500	.000	454.000	2.000	453.500	4.000	453.000	5.500	452.500	9.000
GR	452.000	11.000	450.500	13.500	450.000	15.000	449.500	17.000	449.000	20.000
GR	449.000	61.000	449.000	105.000	449.000	116.000	449.000	129.000	449.000	135.000
GR	449.000	167.000	449.000	176.000	449.000	202.000	449.480	206.500	448.780	215.700
GR	447.950	218.800	447.520	222.400	446.380	223.500	446.300	224.600	446.560	225.600
GR	447.950	226.500	448.300	228.200	449.070	229.900	448.980	235.400	449.000	241.900
GR	449.530	248.500	449.500	280.000	449.500	287.000	449.500	291.500	449.500	308.000
GR	449.500	317.000	449.500	326.000	449.500	329.000	450.000	331.000	450.500	334.500
GR	451.000	337.000	451.500	340.000	452.000	346.000	452.000	360.000	452.000	380.000
GR	452.500	390.000	453.000	399.000	453.500	407.000	454.000	414.500	454.500	423.500
GR	455.000	441.000	.000	.000	.000	.000	.000	.000	.000	.000
EJ	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= 1960.00 CWSEL= 436.46

STA=	5.	20.	30.	40.	44.	55.	61.	79.	99.	195.
PER Q=	3.6	3.3	3.3	2.4	63.7	3.6	4.7	5.7	9.8	
AREA=	17.3	14.5	14.5	8.5	46.1	12.1	22.8	26.4	67.5	
VEL=	.3	.4	.4	.5	2.3	.5	.3	.4	.2	

FLOW DISTRIBUTION FOR SECNO= 3000.00 CWSEL= 437.61

STA=	333.	373.	402.	422.	438.	466.	488.	500.	512.	522.	524.	531.	537.
PER Q=	7.3	6.0	3.9	3.3	5.7	4.5	3.5	4.3	3.3	1.6	38.9	3.5	
AREA=	40.8	32.7	21.6	18.3	31.0	24.4	16.6	18.4	14.8	5.4	30.4	12.2	
VEL=	.3	.3	.3	.3	.3	.3	.4	.4	.4	.5	2.1	.5	

STA=	537.	558.	585.	595.
PER Q=	7.3	5.5	1.4	
AREA=	32.2	29.9	8.9	
VEL=	.4	.3	.3	

FLOW DISTRIBUTION FOR SECNO= 3880.00 CWSEL= 438.44

STA=	254.	271.	304.	324.	325.	332.	335.	346.	354.	363.	402.	421.	436.
PER Q=	4.6	9.2	8.1	1.4	34.4	3.3	5.7	3.7	4.5	13.1	6.1	3.2	
AREA=	21.7	43.9	32.8	5.2	24.7	9.3	21.6	14.2	16.6	58.0	27.7	16.1	
VEL=	.4	.4	.4	.5	2.3	.6	.4	.4	.5	.4	.4	.3	

STA=	436.	484.
PER Q=	2.7	
AREA=	23.8	
VEL=	.2	

FLOW DISTRIBUTION FOR SECNO= 4400.00 CWSEL= 439.05

STA=	36.	46.	50.	78.	118.	143.	164.	187.	258.	275.
PER Q=	37.6	3.4	7.5	10.9	6.6	5.8	6.2	19.0	3.1	
AREA=	26.3	8.5	29.2	42.4	25.7	22.5	24.1	74.4	13.3	
VEL=	2.4	.7	.4	.4	.4	.4	.4	.4	.4	

FLOW DISTRIBUTION FOR SECNO= 4468.00 CWSEL= 439.20

STA=	98.	144.	190.	215.	228.	277.	278.	294.	378.	436.	444.
PER Q=	5.0	12.6	8.9	3.6	9.8	.3	28.6	23.1	7.9	.2	
AREA=	37.0	66.7	42.5	18.9	58.8	1.5	47.5	121.8	55.1	2.9	
VEL=	.2	.3	.4	.3	.3	.3	1.0	.3	.2	.1	

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= 4478.00 CWSEL= 439.15

STA=	5.	20.
PER Q=	100.0	
AREA=	50.4	
VEL=	3.3	

FLOW DISTRIBUTION FOR SECNO= 4494.00 CWSEL= 439.21

STA=	5.	20.
PER Q=	100.0	
AREA=	50.7	
VEL=	3.3	

FLOW DISTRIBUTION FOR SECNO= 4504.00 CWSEL= 440.02

STA=	0.	1.	2.	5.	10.	110.	113.	125.	135.	138.	196.	200.
PER Q=	.0	.1	.5	2.1	48.2	1.7	27.2	5.8	1.1	12.9	.2	
AREA=	.3	.8	3.2	9.7	202.2	6.8	47.8	22.7	5.3	73.8	2.3	
VEL=	.1	.2	.3	.4	.4	.4	1.0	.4	.4	.3	.2	

FLOW DISTRIBUTION FOR SECNO= 4628.00 CWSEL= 440.07

STA=	104.	116.	126.	135.	145.	155.	162.	171.	178.	212.	322.
PER Q=	3.6	8.8	28.2	13.2	11.0	6.8	9.7	5.2	12.8	.8	
AREA=	13.3	23.2	35.2	29.8	27.2	16.8	24.3	14.7	47.1	10.7	
VEL=	.4	.6	1.3	.7	.7	.7	.7	.6	.5	.1	

FLOW DISTRIBUTION FOR SECNO= 4638.00 CWSEL= 440.07

STA=	115.	128.	130.	140.	144.	155.	175.	182.	217.	247.	284.	314.	324.
PER Q=	7.3	1.7	36.7	3.6	6.6	12.0	4.2	16.4	3.5	4.1	3.3	.8	
AREA=	18.5	3.5	35.8	8.0	17.2	31.3	11.0	47.5	17.6	21.0	17.0	4.4	
VEL=	.7	.8	1.7	.7	.6	.6	.6	.6	.3	.3	.3	.3	

FLOW DISTRIBUTION FOR SECNO= 4676.00 CWSEL= 440.15

STA=	111.	146.	154.	164.	174.	205.	214.	240.	249.
PER Q=	9.0	6.2	26.5	9.1	25.0	6.3	15.7	2.2	
AREA=	55.4	25.2	48.8	34.0	97.8	26.1	69.0	13.6	
VEL=	.3	.4	.9	.4	.4	.4	.4	.3	

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= 4686.00 CWSEL= 440.14

STA=	69.	73.	79.	97.	97.	101.	102.	105.	111.	261.	265.
PER Q=	.0	.1	85.9	.0	.5	.2	.4	.7	12.1	.0	
AREA=	.3	.9	64.2	.1	1.5	.6	1.2	2.2	45.3	.3	
VEL=	.2	.3	2.2	.2	.5	.5	.5	.6	.4	.2	

FLOW DISTRIBUTION FOR SECNO= 4700.00 CWSEL= 440.14

STA=	69.	73.	79.	97.	97.	101.	102.	105.	111.	261.	265.
PER Q=	.0	.1	85.7	.0	.5	.2	.4	.8	12.3	.0	
AREA=	.3	.9	64.2	.1	1.5	.6	1.2	2.2	45.8	.4	
VEL=	.2	.3	2.2	.2	.5	.5	.5	.6	.4	.2	

FLOW DISTRIBUTION FOR SECNO= 4740.00 CWSEL= 440.48

STA=	12.	39.	60.	95.	113.	120.	128.	134.	166.	196.	265.	286.	336.
PER Q=	4.0	5.2	8.8	4.9	4.3	18.9	3.2	9.7	7.3	18.6	5.8	4.1	
AREA=	37.4	41.5	70.2	37.4	24.7	35.0	19.5	71.3	58.4	143.4	44.7	50.7	
VEL=	.2	.2	.2	.2	.3	.9	.3	.2	.2	.2	.2	.1	
STA=	336.	385.	413.										
PER Q=	3.8	1.4											
AREA=	47.9	20.4											
VEL=	.1	.1											

FLOW DISTRIBUTION FOR SECNO= 4800.00 CWSEL= 440.49

STA=	12.	39.	60.	95.	113.	120.	128.	134.	166.	196.	265.	286.	336.
PER Q=	4.0	5.2	8.8	4.9	4.3	18.8	3.2	9.7	7.3	18.6	5.8	4.1	
AREA=	37.6	41.7	70.4	37.5	24.8	35.1	19.5	71.5	58.5	143.8	44.8	50.9	
VEL=	.2	.2	.2	.2	.3	.9	.3	.2	.2	.2	.2	.1	
STA=	336.	385.	413.										
PER Q=	3.8	1.4											
AREA=	48.2	20.5											
VEL=	.1	.1											

FLOW DISTRIBUTION FOR SECNO= 5170.00 CWSEL= 440.59

STA=	119.	139.	155.	176.	204.	217.	232.	241.	245.	260.	270.
PER Q=	4.9	5.2	6.4	9.0	4.1	4.7	3.7	2.2	57.9	1.9	
AREA=	26.4	26.2	32.6	45.3	20.7	23.8	17.2	8.7	63.7	11.4	
VEL=	.3	.3	.3	.3	.3	.3	.4	.4	1.5	.3	

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= 5500.00 CWSEL= 441.00

STA=	490.	499.	508.	518.	523.	525.	532.	538.	540.	550.	556.
PER Q=	.4	1.0	4.3	9.6	7.0	21.6	44.4	1.8	8.0	1.9	
AREA=	2.2	4.1	10.2	12.7	7.5	22.2	20.2	3.4	14.3	5.3	
VEL=	.3	.4	.7	1.3	1.5	1.6	3.7	.9	.9	.6	

FLOW DISTRIBUTION FOR SECNO= 5702.00 CWSEL= 441.74

STA=	22.	26.	60.	64.	70.	90.	92.	94.	95.	106.
PER Q=	.1	3.7	1.4	6.1	85.9	1.8	.7	.1	.2	
AREA=	.8	23.5	5.8	16.1	71.8	5.4	2.9	.7	2.5	
VEL=	.1	.3	.4	.6	2.0	.6	.4	.2	.1	

FLOW DISTRIBUTION FOR SECNO= 5712.00 CWSEL= 441.61

STA=	11.	27.
PER Q=	100.0	
AREA=	45.1	
VEL=	3.7	

FLOW DISTRIBUTION FOR SECNO= 5726.00 CWSEL= 441.93

STA=	11.	27.
PER Q=	100.0	
AREA=	50.2	
VEL=	3.3	

FLOW DISTRIBUTION FOR SECNO= 5736.00 CWSEL= 441.91

STA=	77.	78.	82.	83.	95.	96.	97.
PER Q=	.1	1.1	.7	97.3	.7	.1	
AREA=	.4	3.4	1.9	43.5	1.9	.6	
VEL=	.3	.5	.6	3.7	.6	.3	

FLOW DISTRIBUTION FOR SECNO= 6136.00 CWSEL= 443.29

STA=	269.	291.	327.	342.	358.	387.	405.	415.	424.	434.	441.	447.
PER Q=	3.7	13.8	4.4	3.9	10.9	7.9	4.8	5.7	40.1	4.0	.7	
AREA=	22.3	65.4	23.1	22.2	52.0	35.3	20.8	21.5	42.6	16.0	5.5	
VEL=	.3	.4	.3	.3	.4	.4	.4	.4	1.6	.4	.2	

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= 6656.00 CWSEL= 443.72

STA=	35.	88.	106.	116.	130.	141.	142.	152.	161.	177.
PER Q=	13.4	6.0	3.9	5.5	5.7	1.1	53.0	8.1	3.3	
AREA=	60.6	24.5	15.1	21.0	19.4	3.4	40.2	22.8	15.2	
VEL=	.4	.4	.4	.4	.5	.6	2.2	.6	.4	

FLOW DISTRIBUTION FOR SECNO= 7480.00 CWSEL= 444.59

STA=	288.	380.	389.	453.	461.	463.	471.	479.
PER Q=	34.9	4.2	31.6	4.3	1.5	22.4	1.1	
AREA=	163.7	17.8	134.7	17.4	5.8	27.4	7.4	
VEL=	.4	.4	.4	.4	.4	1.4	.3	

FLOW DISTRIBUTION FOR SECNO= 8224.00 CWSEL= 445.20

STA=	641.	659.	673.	707.	720.	743.	779.	813.	826.	883.
PER Q=	.2	53.1	11.1	3.9	6.8	10.7	10.1	3.1	1.1	
AREA=	2.6	43.6	43.4	15.6	27.7	43.3	40.9	13.4	12.4	
VEL=	.1	2.0	.4	.4	.4	.4	.4	.4	.1	

FLOW DISTRIBUTION FOR SECNO= 8462.00 CWSEL= 445.62

STA=	104.	111.	125.	167.	181.	185.	186.	188.	246.	310.	322.
PER Q=	.2	2.4	15.6	41.5	5.1	.9	1.2	21.6	11.1	.4	
AREA=	1.9	12.1	57.4	37.5	11.5	2.4	3.7	79.1	55.3	3.8	
VEL=	.2	.3	.5	1.8	.7	.6	.5	.5	.3	.2	

FLOW DISTRIBUTION FOR SECNO= 8472.00 CWSEL= 445.59

STA=	116.	156.	165.	167.	175.	178.	179.	190.	266.	292.
PER Q=	3.6	4.0	2.0	49.3	10.3	3.7	4.3	20.9	1.9	
AREA=	13.5	8.3	4.2	31.9	12.7	3.7	9.3	50.4	7.7	
VEL=	.4	.8	.8	2.6	1.4	1.7	.8	.7	.4	

FLOW DISTRIBUTION FOR SECNO= 8484.00 CWSEL= 445.59

STA=	116.	156.	165.	167.	175.	178.	179.	190.	266.	292.
PER Q=	3.6	4.0	2.0	49.2	10.3	3.7	4.3	20.9	1.9	
AREA=	13.5	8.3	4.2	31.9	12.7	3.7	9.3	50.5	7.8	
VEL=	.4	.8	.8	2.6	1.4	1.7	.8	.7	.4	

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= 8494.00 CWSEL= 445.86

STA=	25.	78.	97.	122.	164.	174.	184.	205.	301.	320.
PER Q=	5.0	4.0	6.7	11.3	3.3	4.0	32.1	32.2	1.5	
AREA=	51.0	30.5	46.4	77.9	21.1	23.6	66.0	203.4	14.4	
VEL=	.2	.2	.2	.2	.3	.3	.8	.3	.2	

FLOW DISTRIBUTION FOR SECNO= 8622.00 CWSEL= 445.91

STA=	15.	48.	107.	179.	226.	266.	296.	326.	351.	360.	384.	386.	395.
PER Q=	5.1	11.2	13.6	8.9	7.4	5.7	5.7	4.7	3.4	8.2	.8	23.7	
AREA=	39.6	83.4	100.9	65.9	55.4	42.0	42.7	35.0	18.8	48.3	4.3	30.5	
VEL=	.2	.2	.2	.2	.2	.2	.2	.2	.3	.3	.3	1.3	

STA=	395.	408.
PER Q=	1.6	
AREA=	9.1	
VEL=	.3	

FLOW DISTRIBUTION FOR SECNO= 8922.00 CWSEL= 446.17

STA=	100.	171.	284.	300.	397.	412.	425.	440.	443.
PER Q=	5.0	19.0	4.8	29.7	4.9	3.9	32.7	.0	
AREA=	47.1	131.5	26.7	161.9	26.1	21.2	41.7	.3	
VEL=	.2	.2	.3	.3	.3	.3	1.3	.1	

FLOW DISTRIBUTION FOR SECNO= 9198.00 CWSEL= 446.56

STA=	276.	280.	283.	331.	340.	349.	384.	401.	402.
PER Q=	.1	.5	15.3	3.8	3.8	15.7	60.8	.0	
AREA=	.9	2.8	62.9	14.0	14.0	56.3	47.5	.2	
VEL=	.2	.3	.4	.5	.5	.5	2.1	.2	

FLOW DISTRIBUTION FOR SECNO= 9308.00 CWSEL= 446.80

STA=	259.	266.	292.	352.	354.	371.	372.	374.	375.
PER Q=	.1	1.9	12.8	.8	83.9	.3	.2	.0	
AREA=	1.0	14.2	62.9	3.1	58.8	1.3	1.1	.2	
VEL=	.1	.2	.3	.4	2.4	.4	.3	.1	

FLOW DISTRIBUTION FOR SECNO= 9316.00 CWSEL= 446.82

STA=	14.	53.
PER Q=	100.0	
AREA=	71.0	
VEL=	2.4	

SECNO	DEPTH	CWSEL	CRITWS	WSELK	EG	HV	HL	QLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= 9324.00 CWSEL= 447.06

STA=	14.	53.
PER Q=	100.0	
AREA=	77.8	
VEL=	2.1	

FLOW DISTRIBUTION FOR SECNO= 9336.00 CWSEL= 447.27

STA=	250.	315.	340.	343.	360.	366.	385.	409.
PER Q=	10.9	8.3	1.6	68.5	4.8	4.2	1.7	
AREA=	84.7	50.6	8.3	76.6	21.1	29.9	18.4	
VEL=	.2	.3	.3	1.5	.4	.2	.2	

FLOW DISTRIBUTION FOR SECNO= 9520.00 CWSEL= 447.52

STA=	243.	273.	285.	311.	320.	358.	365.	375.	384.	393.
PER Q=	7.5	3.5	11.9	4.2	19.6	4.6	44.8	3.3	.4	
AREA=	40.6	18.3	51.6	18.2	81.2	17.3	39.9	15.8	4.8	
VEL=	.3	.3	.4	.4	.4	.4	1.9	.4	.2	

FLOW DISTRIBUTION FOR SECNO= 9998.00 CWSEL= 448.21

STA=	162.	206.	209.	218.	236.	294.	328.	337.
PER Q=	18.8	1.7	50.6	7.2	15.4	5.7	.6	
AREA=	97.8	8.2	50.4	39.8	99.2	43.9	6.3	
VEL=	.3	.4	1.7	.3	.3	.2	.2	

FLOW DISTRIBUTION FOR SECNO= 10180.00 CWSEL= 448.40

STA=	136.	178.	183.	190.	194.	231.	304.	322.	328.
PER Q=	15.5	4.5	37.0	3.3	13.5	22.2	3.5	.5	
AREA=	98.5	21.8	41.3	17.1	89.2	157.2	29.8	5.4	
VEL=	.3	.3	1.5	.3	.3	.2	.2	.1	

FLOW DISTRIBUTION FOR SECNO= 10198.00 CWSEL= 448.22

STA=	98.	106.	110.	111.	127.	163.
PER Q=	.0	.0	.0	99.8	.2	
AREA=	.5	.4	.1	66.8	4.0	
VEL=	.1	.1	.0	2.5	.1	

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= 10204.00 CWSEL= 448.22

STA=	98.	106.	110.	111.	127.	163.
PER Q=	.0	.0	.0	99.8	.2	
AREA=	.5	.4	.1	66.8	4.0	
VEL=	.1	.1	.0	2.5	.1	

FLOW DISTRIBUTION FOR SECNO= 10214.00 CWSEL= 448.56

STA=	116.	175.	178.	222.	301.	344.
PER Q=	5.5	1.1	77.8	13.3	2.3	
AREA=	71.4	9.9	213.9	162.8	39.8	
VEL=	.1	.2	.6	.1	.1	

FLOW DISTRIBUTION FOR SECNO= 10493.00 CWSEL= 448.59

STA=	15.	85.	129.	205.	282.	283.	297.	318.	346.	365.
PER Q=	5.3	5.5	21.1	29.7	.2	27.8	6.4	3.7	.4	
AREA=	74.1	63.3	176.9	219.4	1.7	62.2	51.7	42.1	8.1	
VEL=	.1	.1	.2	.2	.2	.7	.2	.1	.1	

FLOW DISTRIBUTION FOR SECNO= 10707.00 CWSEL= 448.63

STA=	14.	92.	126.	142.	163.	183.	220.	249.	292.	304.	329.	345.	352.
PER Q=	6.8	4.1	4.2	5.3	5.3	9.6	8.9	16.1	4.4	9.1	24.9	1.1	
AREA=	85.7	45.4	34.0	43.6	43.6	78.7	67.8	114.3	31.5	64.4	58.4	10.2	
VEL=	.1	.2	.2	.2	.2	.2	.2	.2	.2	.2	.7	.2	

FLOW DISTRIBUTION FOR SECNO= 10736.00 CWSEL= 448.64

STA=	21.	84.	126.	256.	322.	328.	348.	353.
PER Q=	10.8	11.8	37.5	19.0	2.4	18.4	.1	
AREA=	118.6	109.1	343.1	174.2	19.3	82.1	2.6	
VEL=	.2	.2	.2	.2	.2	.4	.1	

FLOW DISTRIBUTION FOR SECNO= 10761.00 CWSEL= 448.45

STA=	193.	213.
PER Q=	100.0	
AREA=	60.6	
VEL=	2.8	

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= 10778.00 CWSEL= 448.50

STA=	193.	213.
PER Q=	100.0	
AREA=	61.5	
VEL=	2.7	

FLOW DISTRIBUTION FOR SECNO= 10798.00 CWSEL= 448.99

STA=	77.	156.	170.	320.	356.	374.	376.	391.	419.
PER Q=	8.5	4.1	50.3	12.1	6.0	.8	16.0	2.2	
AREA=	101.0	38.3	448.2	107.6	53.8	6.5	67.9	30.2	
VEL=	.1	.2	.2	.2	.2	.2	.4	.1	

FLOW DISTRIBUTION FOR SECNO= 11084.00 CWSEL= 449.00

STA=	232.	254.	295.	335.	353.	417.	428.	455.	482.	540.	742.
PER Q=	4.4	14.7	14.2	21.1	23.6	3.9	8.0	5.3	3.2	1.6	
AREA=	36.9	103.9	100.1	69.9	164.7	27.5	60.8	47.3	45.7	34.6	
VEL=	.2	.2	.2	.5	.2	.2	.2	.2	.1	.1	

FLOW DISTRIBUTION FOR SECNO= 14086.00 CWSEL= 449.56

STA=	40.	93.	422.	433.	440.	574.	598.	632.	645.
PER Q=	10.8	5.4	38.4	3.0	27.2	5.7	8.0	1.5	
AREA=	50.1	22.1	34.4	10.9	129.1	25.5	35.6	8.7	
VEL=	.4	.4	1.9	.5	.4	.4	.4	.3	

FLOW DISTRIBUTION FOR SECNO= 15286.00 CWSEL= 450.60

STA=	13.	61.	105.	116.	129.	167.	202.	216.	219.	230.	242.	280.	308.
PER Q=	13.0	13.0	3.3	3.9	11.3	10.4	3.4	1.6	22.3	3.5	6.3	4.4	
AREA=	71.8	70.3	17.6	20.8	60.7	55.9	19.6	6.9	33.6	19.1	42.9	30.8	
VEL=	.3	.3	.3	.3	.3	.3	.3	.4	1.1	.3	.2	.2	

STA=	308.	329.	335.
PER Q=	3.3	.3	
AREA=	23.1	2.9	
VEL=	.2	.2	

THIS RUN EXECUTED 12-01-88

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  HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
  ERROR CORR -  01,02,03,04,05,06
  MODIFICATION -  50,51,52,53,54,55,56
  IBM-PC-XT VERSION AUGUST 1985
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T1      TISDALE HYDRAULICS STUDY
T2      DOGNIDE RIVER AT TISDALE
T3      1:500 ENCROACHMENT MODEL

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0.        3.        0.        0.   .000000      1.00       1.0        0.   436.760      .000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

    15.000      .000    -1.000      .000      .000     -.618    -1.000      .000      .000      .000
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THIS RUN EXECUTED 12-01-88

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  HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
  ERROR CORR -  01,02,03,04,05,06
  MODIFICATION -  50,51,52,53,54,55,56
  IBM-PC-XT VERSION AUGUST 1985
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

1:500 DESIGN MODEL

SUMMARY PRINTOUT

SECNO	EG	CWSEL	CRIWS	K*XNL	K*XNCH	K*XNR	QLOB	QCH	QROB
1960.000	436.63	436.46	435.65	110.00	33.99	110.00	21.04	106.32	39.64
1960.000	436.87	436.76	435.63	110.00	33.99	110.00	23.01	96.30	47.69
3000.000	437.70	437.61	437.08	110.00	33.99	110.00	72.50	65.00	29.50
3000.000	437.72	437.63	437.05	110.00	33.99	110.00	71.60	65.42	29.97
3880.000	438.54	438.44	437.71	110.00	33.99	110.00	38.96	57.48	70.56
3880.000	438.55	438.46	437.78	110.00	33.99	110.00	39.05	57.21	70.74
4400.000	439.16	439.05	438.71	110.00	33.99	110.00	.00	62.87	104.13
4400.000	439.17	439.05	438.71	110.00	33.99	110.00	.00	62.83	104.17
4468.000	439.22	439.20	438.29	70.00	33.99	70.00	67.17	47.78	52.05
4468.000	439.22	439.20	438.29	70.00	33.99	70.00	66.02	48.35	52.63
4478.000	439.71	439.15	438.03	110.00	43.26	110.00	.00	167.00	.00
4478.000	439.72	439.16	438.03	110.00	43.26	110.00	.00	167.00	.00
4494.000	439.76	439.21	.00	110.00	43.26	110.00	.00	167.00	.00
4494.000	439.77	439.22	.00	110.00	43.26	110.00	.00	167.00	.00
4504.000	440.04	440.02	438.57	70.00	43.26	70.00	88.00	45.38	33.61
4504.000	440.04	440.02	438.57	70.00	43.26	70.00	88.02	45.39	33.59
4628.000	440.11	440.07	438.48	70.00	43.26	70.00	20.61	47.02	99.38
4628.000	440.11	440.07	438.49	70.00	43.26	70.00	17.98	47.90	101.12
4638.000	440.13	440.07	439.27	70.00	43.26	70.00	14.89	61.29	90.82
4638.000	440.16	440.06	439.30	70.00	43.26	70.00	16.32	68.86	81.82
4676.000	440.17	440.15	437.94	70.00	43.26	70.00	25.38	44.20	97.43
4676.000	440.21	440.19	437.94	70.00	43.26	70.00	25.57	43.89	97.54

SECNO	EG	CWSEL	CRIWS	K*XNL	K*XNCH	K*XNR	QLOB	QCH	QROB
4686.000	440.36	440.14	438.53	70.00	46.35	70.00	.29	143.44	23.26
4686.000	440.38	440.18	438.53	70.00	46.35	70.00	.43	139.32	27.24
4700.000	440.36	440.14	.00	70.00	46.35	70.00	.30	143.12	23.58
4700.000	440.38	440.18	.00	70.00	46.35	70.00	.44	139.17	27.39
4740.000	440.49	440.48	438.99	110.00	43.26	110.00	45.54	31.55	89.90
4740.000	440.50	440.48	438.99	110.00	43.26	110.00	49.71	34.59	82.70
4800.000	440.50	440.49	438.94	110.00	43.26	110.00	45.55	31.47	89.98
4800.000	440.51	440.50	438.94	110.00	43.26	110.00	46.12	31.99	88.89
5170.000	440.66	440.59	438.68	110.00	43.26	110.00	67.10	96.67	3.23
5170.000	440.67	440.60	438.66	110.00	43.26	110.00	67.41	96.74	2.85
5500.000	441.35	441.00	440.27	110.00	43.26	110.00	73.35	74.12	19.53
5500.000	441.37	441.01	440.27	110.00	43.26	110.00	71.85	75.04	20.10
5702.000	441.92	441.74	440.04	110.00	43.26	110.00	18.91	143.46	4.63
5702.000	441.94	441.77	440.04	110.00	43.26	110.00	19.28	142.99	4.73
5712.000	442.31	441.61	441.02	110.00	43.26	110.00	.00	167.00	.00
5712.000	442.32	441.64	441.02	110.00	43.26	110.00	.00	167.00	.00
5726.000	442.49	441.93	.00	110.00	43.26	110.00	.00	167.00	.00
5726.000	442.51	441.96	.00	110.00	43.26	110.00	.00	167.00	.00
5736.000	442.60	441.91	440.99	110.00	40.17	110.00	3.10	162.57	1.34
5736.000	442.62	441.94	440.99	110.00	40.17	110.00	3.22	162.41	1.37
6136.000	443.35	443.29	442.11	110.00	40.17	110.00	92.22	66.91	7.87
6136.000	443.35	443.30	442.13	110.00	40.17	110.00	92.06	67.03	7.92
6656.000	443.85	443.72	442.93	110.00	40.17	110.00	59.52	88.58	18.90
6656.000	443.86	443.73	442.95	110.00	40.17	110.00	59.73	88.96	18.31
7480.000	444.62	444.59	443.32	110.00	40.17	110.00	127.77	37.34	1.89
7480.000	444.62	444.60	443.32	110.00	40.17	110.00	128.27	37.43	1.30
8224.000	445.32	445.20	444.62	110.00	40.17	110.00	.35	88.73	77.93
8224.000	445.33	445.21	444.62	110.00	40.17	110.00	.00	89.75	77.25
8462.000	445.70	445.62	444.92	110.00	40.17	110.00	30.53	69.29	67.18
8462.000	445.73	445.64	444.90	110.00	40.17	110.00	30.53	74.15	62.32
8472.000	445.78	445.59	445.28	73.00	40.17	73.00	16.02	82.30	68.68
8472.000	445.80	445.63	445.28	73.00	40.17	73.00	16.71	79.99	70.30
8484.000	445.78	445.59	.00	73.00	40.17	73.00	16.05	82.20	68.75
8484.000	445.80	445.63	.00	73.00	40.17	73.00	16.71	79.98	70.31

SECNO	EG	CWSEL	CRIWS	K*XNL	K*XNCH	K*XNR	QLOB	QCH	QROB
8494.000	445.87	445.86	444.35	110.00	45.11	110.00	57.33	53.54	56.12
8494.000	445.88	445.87	444.36	110.00	45.11	110.00	56.55	54.16	56.29
8622.000	445.93	445.91	445.02	150.00	45.11	110.00	124.73	39.63	2.64
8622.000	445.94	445.92	445.02	150.00	45.11	110.00	124.99	39.45	2.56
8922.000	446.20	446.17	445.26	150.00	45.11	110.00	112.43	54.56	.02
8922.000	446.22	446.18	445.25	150.00	45.11	110.00	111.03	55.97	.00
9198.000	446.71	446.56	445.83	150.00	45.11	110.00	65.49	101.47	.04
9198.000	446.73	446.59	445.83	150.00	45.11	110.00	66.48	100.52	.00
9308.000	447.04	446.80	445.45	150.00	45.11	110.00	25.93	140.17	.90
9308.000	447.08	446.82	445.51	150.00	45.11	110.00	23.54	143.04	.42
9316.000	447.10	446.82	445.67	150.00	46.35	110.00	.00	167.00	.00
9316.000	447.12	446.85	445.67	150.00	46.35	110.00	.00	167.00	.00
9324.000	447.29	447.06	.00	150.00	46.35	110.00	.00	167.00	.00
9324.000	447.31	447.08	.00	150.00	46.35	110.00	.00	167.00	.00
9336.000	447.35	447.27	444.85	150.00	46.35	150.00	34.80	114.39	17.81
9336.000	447.37	447.29	444.85	150.00	46.35	150.00	34.99	114.17	17.84
9520.000	447.61	447.52	446.44	150.00	46.35	150.00	85.85	74.86	6.29
9520.000	447.62	447.53	446.44	150.00	46.35	150.00	86.13	75.12	5.75
9998.000	448.29	448.21	446.55	150.00	46.35	150.00	34.29	84.52	48.19
9998.000	448.30	448.22	446.54	150.00	46.35	150.00	34.27	84.40	48.33
10180.000	448.45	448.40	446.65	150.00	46.35	150.00	33.33	61.78	71.88
10180.000	448.46	448.41	446.66	150.00	46.35	150.00	33.21	61.79	71.99
10198.000	448.54	448.22	446.14	150.00	46.35	150.00	.05	166.66	.29
10198.000	448.55	448.23	446.14	150.00	46.35	150.00	.06	166.61	.32
10204.000	448.54	448.22	.00	150.00	46.35	150.00	.05	166.66	.29
10204.000	448.55	448.23	.00	150.00	46.35	150.00	.06	166.62	.32
10214.000	448.57	448.56	444.43	110.00	43.26	110.00	11.05	129.93	26.02
10214.000	448.58	448.56	444.43	110.00	43.26	110.00	10.43	131.22	25.36
10493.000	448.60	448.59	446.56	110.00	43.26	110.00	103.03	46.41	17.56
10493.000	448.61	448.60	446.56	110.00	43.26	110.00	103.14	46.34	17.52
10707.000	448.64	448.63	446.83	110.00	43.26	110.00	123.70	41.51	1.79
10707.000	448.64	448.64	446.83	110.00	43.26	110.00	123.82	41.48	1.70
10736.000	448.64	448.64	446.42	70.00	43.26	70.00	136.07	30.73	.19
10736.000	448.65	448.64	446.51	70.00	43.26	70.00	167.00	.00	.00

SECNO	EG	CWSEL	CRIWS	K*XNL	K*XNCH	K*XNR	QLOB	QCH	QROB
10761.000	448.83	448.45	447.19	70.00	43.26	70.00	.00	167.00	.00
10761.000	448.84	448.46	447.20	70.00	43.26	70.00	.00	167.00	.00
10778.000	448.88	448.50	.00	70.00	43.26	70.00	.00	167.00	.00
10778.000	448.89	448.51	.00	70.00	43.26	70.00	.00	167.00	.00
10798.000	448.99	448.99	446.47	70.00	43.26	70.00	136.58	26.74	3.68
10798.000	449.00	449.00	446.47	70.00	43.26	70.00	136.67	26.73	3.60
11084.000	449.01	449.00	446.99	70.00	43.26	70.00	55.58	35.20	76.21
11084.000	449.01	449.01	446.99	70.00	43.26	70.00	55.55	35.15	76.30
14086.000	449.64	449.56	449.11	110.00	43.26	110.00	27.15	64.08	75.77
14086.000	449.76	449.55	449.25	110.00	43.26	110.00	10.68	91.26	65.05
15286.000	450.62	450.60	449.62	110.00	43.26	110.00	99.82	37.28	29.91
15286.000	450.79	450.77	449.63	110.00	43.26	110.00	100.69	35.03	31.28

1:500 DESIGN MODEL

SUMMARY PRINTOUT

SECNO	Q	QWEIR	QPR	SSTA	ENDST	DEPTH	STCHL	STCHR
1960.000	167.00	.00	.00	5.35	195.48	4.56	44.10	55.40
1960.000	167.00	.00	.00	4.31	215.84	4.86	44.10	55.40
3000.000	167.00	.00	.00	333.18	595.43	4.35	523.50	531.40
3000.000	167.00	.00	.00	342.00	595.48	4.37	523.50	531.40
3880.000	167.00	.00	.00	254.10	483.52	4.34	325.40	331.60
3880.000	167.00	.00	.00	254.08	483.57	4.36	325.40	331.60
4400.000	167.00	.00	.00	36.18	275.38	3.60	35.30	45.70
4400.000	167.00	.00	.00	36.17	270.00	3.60	35.30	45.70
4468.000	167.00	.00	.00	98.00	443.60	4.20	278.00	294.00
4468.000	167.00	.00	.00	118.70	438.00	4.20	278.00	294.00
4478.000	167.00	.00	.00	5.10	19.70	3.85	5.10	19.70
4478.000	167.00	.00	.00	5.10	19.70	3.86	5.10	19.70
4494.000	167.00	.00	167.00	5.10	19.70	3.81	5.10	19.70
4494.000	167.00	.00	167.00	5.10	19.70	3.82	5.10	19.70
4504.000	167.00	.00	.00	.00	200.00	5.02	113.00	125.00
4504.000	167.00	.00	.00	1.20	198.10	5.02	113.00	125.00
4628.000	167.00	.00	.00	103.76	322.08	4.17	125.50	134.60
4628.000	167.00	.00	.00	112.00	218.00	4.17	125.50	134.60
4638.000	167.00	.00	.00	115.37	324.07	4.17	129.50	139.50
4638.000	167.00	.00	.00	117.80	223.00	4.16	129.50	139.50
4676.000	167.00	.00	.00	110.69	249.00	5.15	154.00	164.00
4676.000	167.00	.00	.00	111.60	248.00	5.19	154.00	164.00
4686.000	167.00	.00	.00	69.14	265.26	4.85	78.90	96.60
4686.000	167.00	.00	.00	67.95	266.63	4.89	78.90	96.60
4700.000	167.00	108.63	57.61	69.05	265.37	4.85	78.90	96.60
4700.000	167.00	113.17	53.83	67.91	266.68	4.89	78.90	96.60
4740.000	167.00	.00	.00	11.61	413.17	5.30	120.00	127.50
4740.000	167.00	.00	.00	16.50	290.00	5.30	120.00	127.50
4800.000	167.00	.00	.00	11.58	413.26	5.31	120.00	127.50
4800.000	167.00	.00	.00	16.50	381.80	5.32	120.00	127.50
5170.000	167.00	.00	.00	118.82	269.94	5.41	245.10	260.00
5170.000	167.00	.00	.00	121.60	266.00	5.42	245.10	260.00

SECNO	Q	QWEIR	QPR	SSTA	ENDST	DEPTH	STCHL	STCHR
5500.000	167.00	.00	.00	490.47	556.00	3.93	531.60	537.60
5500.000	167.00	.00	.00	508.00	555.00	3.94	531.60	537.60
5702.000	167.00	.00	.00	22.47	106.46	3.74	70.00	90.00
5702.000	167.00	.00	.00	23.60	105.40	3.77	70.00	90.00
5712.000	167.00	.00	.00	11.30	27.40	3.64	11.30	27.40
5712.000	167.00	.00	.00	11.30	27.40	3.67	11.30	27.40
5726.000	167.00	1.52	164.87	11.30	27.40	3.96	11.30	27.40
5726.000	167.00	2.15	164.19	11.30	27.40	3.99	11.30	27.40
5736.000	167.00	.00	.00	76.57	97.11	3.91	83.00	95.00
5736.000	167.00	.00	.00	76.44	97.14	3.94	83.00	95.00
6136.000	167.00	.00	.00	269.46	446.71	4.65	423.50	434.00
6136.000	167.00	.00	.00	277.00	446.74	4.66	423.50	434.00
6656.000	167.00	.00	.00	34.98	176.81	4.24	141.70	152.00
6656.000	167.00	.00	.00	38.70	171.40	4.25	141.70	152.00
7480.000	167.00	.00	.00	287.73	478.78	4.18	462.90	471.00
7480.000	167.00	.00	.00	290.80	474.00	4.19	462.90	471.00
8224.000	167.00	.00	.00	641.17	882.62	4.22	659.40	672.60
8224.000	167.00	.00	.00	659.30	824.60	4.23	659.40	672.60
8462.000	167.00	.00	.00	104.18	322.28	4.62	167.10	181.00
8462.000	167.00	.00	.00	118.80	272.40	4.64	167.10	181.00
8472.000	167.00	.00	.00	116.36	291.70	4.67	167.10	174.80
8472.000	167.00	.00	.00	114.13	293.36	4.71	167.10	174.80
8484.000	167.00	124.75	42.98	116.27	291.77	4.67	167.10	174.80
8484.000	167.00	125.82	41.61	114.12	293.36	4.71	167.10	174.80
8494.000	167.00	.00	.00	24.66	319.69	4.86	184.00	205.00
8494.000	167.00	.00	.00	44.40	307.40	4.87	184.00	205.00
8622.000	167.00	.00	.00	15.49	408.03	4.36	386.00	394.80
8622.000	167.00	.00	.00	18.10	401.30	4.37	386.00	394.80
8922.000	167.00	.00	.00	100.14	442.79	4.58	424.70	440.00
8922.000	167.00	.00	.00	160.00	440.00	4.59	424.70	440.00
9198.000	167.00	.00	.00	275.60	401.66	4.08	384.00	400.70
9198.000	167.00	.00	.00	281.50	400.70	4.11	384.00	400.70
9308.000	167.00	.00	.00	259.45	375.19	4.30	354.00	371.00
9308.000	167.00	.00	.00	292.00	372.00	4.32	354.00	371.00

SECNO	Q	QWEIR	QPR	SSTA	ENDST	DEPTH	STCHL	STCHR
9316.000	167.00	.00	.00	14.14	47.91	3.99	5.40	53.10
9316.000	167.00	.00	.00	14.08	47.95	4.02	5.40	53.10
9324.000	167.00	.00	167.00	13.71	48.26	4.23	5.40	53.10
9324.000	167.00	.00	167.00	13.67	48.28	4.25	5.40	53.10
9336.000	167.00	.00	.00	250.36	408.73	4.77	343.00	360.00
9336.000	167.00	.00	.00	254.10	404.10	4.79	343.00	360.00
9520.000	167.00	.00	.00	242.86	393.50	4.33	365.00	375.00
9520.000	167.00	.00	.00	247.40	385.20	4.34	365.00	375.00
9998.000	167.00	.00	.00	162.37	337.27	5.71	208.50	218.00
9998.000	167.00	.00	.00	164.80	334.00	5.72	208.50	218.00
10180.000	167.00	.00	.00	136.39	327.81	5.90	183.00	190.00
10180.000	167.00	.00	.00	140.00	326.00	5.91	183.00	190.00
10198.000	167.00	.00	.00	98.16	162.97	5.03	111.20	126.60
10198.000	167.00	.00	.00	97.66	164.53	5.04	111.20	126.60
10204.000	167.00	53.40	113.60	98.23	162.75	5.03	111.20	126.60
10204.000	167.00	54.32	112.70	97.74	164.27	5.04	111.20	126.60
10214.000	167.00	.00	.00	116.21	343.70	6.06	178.00	222.00
10214.000	167.00	.00	.00	147.00	317.00	6.06	178.00	222.00
10493.000	167.00	.00	.00	14.81	365.34	5.09	282.50	297.00
10493.000	167.00	.00	.00	16.70	355.00	5.10	282.50	297.00
10707.000	167.00	.00	.00	14.49	351.76	4.13	328.50	345.00
10707.000	167.00	.00	.00	16.40	350.20	4.14	328.50	345.00
10736.000	167.00	.00	.00	21.44	352.56	5.14	328.00	348.00
10736.000	167.00	.00	.00	24.30	249.70	2.64	328.00	348.00
10761.000	167.00	.00	.00	193.00	213.30	4.30	193.00	213.30
10761.000	167.00	.00	.00	193.00	213.30	4.31	193.00	213.30
10778.000	167.00	.00	167.00	193.00	213.30	4.35	193.00	213.30
10778.000	167.00	.00	167.00	193.00	213.30	4.36	193.00	213.30
10798.000	167.00	.00	.00	76.87	418.78	4.79	376.00	391.00
10798.000	167.00	.00	.00	100.90	410.00	4.80	376.00	391.00
11084.000	167.00	.00	.00	231.99	742.08	5.24	335.00	352.50
11084.000	167.00	.00	.00	234.00	654.00	5.25	335.00	352.50
14086.000	167.00	.00	.00	40.05	645.19	3.93	422.00	432.90
14086.000	167.00	.00	.00	409.65	563.00	3.92	422.00	432.90

SECNO	Q	QWEIR	QPR	SSTA	ENDST	DEPTH	STCHL	STCHR
15286.000	167.00	.00	.00	13.34	334.99	4.30	218.80	229.90
15286.000	167.00	.00	.00	18.00	328.00	4.47	218.80	229.90

1:500 DESIGN MODEL

SUMMARY PRINTOUT

SECNO	EG	CWSEL	SSTA	STENCL	ENDST	STENCR
1960.000	436.63	436.46	5.35	.00	195.48	.00
1960.000	436.87	436.76	4.31	.00	215.84	.00
3000.000	437.70	437.61	333.18	.00	595.43	.00
3000.000	437.72	437.63	342.00	342.00	595.48	597.00
3880.000	438.54	438.44	254.10	.00	483.52	.00
3880.000	438.55	438.46	254.08	252.00	483.57	486.00
4400.000	439.16	439.05	36.18	.00	275.38	.00
4400.000	439.17	439.05	36.17	20.00	270.00	270.00
4468.000	439.22	439.20	98.00	.00	443.60	.00
4468.000	439.22	439.20	118.70	118.70	438.00	438.00
4478.000	439.71	439.15	5.10	.00	19.70	.00
4478.000	439.72	439.16	5.10	.00	19.70	.00
4494.000	439.76	439.21	5.10	.00	19.70	.00
4494.000	439.77	439.22	5.10	.00	19.70	.00
4504.000	440.04	440.02	.00	.00	200.00	.00
4504.000	440.04	440.02	1.20	1.20	198.10	198.10
4628.000	440.11	440.07	103.76	.00	322.08	.00
4628.000	440.11	440.07	112.00	112.00	218.00	218.00
4638.000	440.13	440.07	115.37	.00	324.07	.00
4638.000	440.16	440.06	117.80	117.80	223.00	223.00
4676.000	440.17	440.15	110.69	.00	249.00	.00
4676.000	440.21	440.19	111.60	111.60	248.00	248.00
4686.000	440.36	440.14	69.14	.00	265.26	.00
4686.000	440.38	440.18	67.95	.00	266.63	.00
4700.000	440.36	440.14	69.05	.00	265.37	.00
4700.000	440.38	440.18	67.91	.00	266.68	.00
4740.000	440.49	440.48	11.61	.00	413.17	.00
4740.000	440.50	440.48	16.50	16.50	290.00	290.00
4800.000	440.50	440.49	11.58	.00	413.26	.00
4800.000	440.51	440.50	16.50	16.50	381.80	381.80
5170.000	440.66	440.59	118.82	.00	269.94	.00
5170.000	440.67	440.60	121.60	121.60	266.00	266.00

SECNO	EG	CWSEL	SSTA	STENCL	ENDST	STENCR
5500.000	441.35	441.00	490.47	.00	556.00	.00
5500.000	441.37	441.01	508.00	508.00	555.00	555.00
5702.000	441.92	441.74	22.47	.00	106.46	.00
5702.000	441.94	441.77	23.60	23.60	105.40	105.40
5712.000	442.31	441.61	11.30	.00	27.40	.00
5712.000	442.32	441.64	11.30	.00	27.40	.00
5726.000	442.49	441.93	11.30	.00	27.40	.00
5726.000	442.51	441.96	11.30	.00	27.40	.00
5736.000	442.60	441.91	76.57	.00	97.11	.00
5736.000	442.62	441.94	76.44	64.40	97.14	130.00
6136.000	443.35	443.29	269.46	.00	446.71	.00
6136.000	443.35	443.30	277.00	277.00	446.74	450.00
6656.000	443.85	443.72	34.98	.00	176.81	.00
6656.000	443.86	443.73	38.70	38.70	171.40	171.40
7480.000	444.62	444.59	287.73	.00	478.78	.00
7480.000	444.62	444.60	290.80	290.80	474.00	474.00
8224.000	445.32	445.20	641.17	.00	882.62	.00
8224.000	445.33	445.21	659.30	659.30	824.60	824.60
8462.000	445.70	445.62	104.18	.00	322.28	.00
8462.000	445.73	445.64	118.80	118.80	272.40	272.40
8472.000	445.78	445.59	116.36	.00	291.70	.00
8472.000	445.80	445.63	114.13	.00	293.36	.00
8484.000	445.78	445.59	116.27	.00	291.77	.00
8484.000	445.80	445.63	114.12	.00	293.36	.00
8494.000	445.87	445.86	24.66	.00	319.69	.00
8494.000	445.88	445.87	44.40	44.40	307.40	307.40
8622.000	445.93	445.91	15.49	.00	408.03	.00
8622.000	445.94	445.92	18.10	18.10	401.30	401.30
8922.000	446.20	446.17	100.14	.00	442.79	.00
8922.000	446.22	446.18	160.00	160.00	440.00	440.00
9198.000	446.71	446.56	275.60	.00	401.66	.00
9198.000	446.73	446.59	281.50	281.50	400.70	400.70
9308.000	447.04	446.80	259.45	.00	375.19	.00
9308.000	447.08	446.82	292.00	292.00	372.00	372.00

SECNO	EG	CWSEL	SSTA	STENCL	ENDST	STENCR
9316.000	447.10	446.82	14.14	.00	47.91	.00
9316.000	447.12	446.85	14.08	.00	47.95	.00
9324.000	447.29	447.06	13.71	.00	48.26	.00
9324.000	447.31	447.08	13.67	.00	48.28	.00
9336.000	447.35	447.27	250.36	.00	408.73	.00
9336.000	447.37	447.29	254.10	254.10	404.10	404.10
9520.000	447.61	447.52	242.86	.00	393.50	.00
9520.000	447.62	447.53	247.40	247.40	385.20	385.20
9998.000	448.29	448.21	162.37	.00	337.27	.00
9998.000	448.30	448.22	164.80	164.80	334.00	334.00
10180.000	448.45	448.40	136.39	.00	327.81	.00
10180.000	448.46	448.41	140.00	140.00	326.00	326.00
10198.000	448.54	448.22	98.16	.00	162.97	.00
10198.000	448.55	448.23	97.66	.00	164.53	.00
10204.000	448.54	448.22	98.23	.00	162.75	.00
10204.000	448.55	448.23	97.74	.00	164.27	.00
10214.000	448.57	448.56	116.21	.00	343.70	.00
10214.000	448.58	448.56	147.00	147.00	317.00	317.00
10493.000	448.60	448.59	14.81	.00	365.34	.00
10493.000	448.61	448.60	16.70	16.70	355.00	355.00
10707.000	448.64	448.63	14.49	.00	351.76	.00
10707.000	448.64	448.64	16.40	16.40	350.20	350.20
10736.000	448.64	448.64	21.44	.00	352.56	.00
10736.000	448.65	448.64	24.30	24.30	249.70	249.70
10761.000	448.83	448.45	193.00	.00	213.30	.00
10761.000	448.84	448.46	193.00	.00	213.30	.00
10778.000	448.88	448.50	193.00	.00	213.30	.00
10778.000	448.89	448.51	193.00	.00	213.30	.00
10798.000	448.99	448.99	76.87	.00	418.78	.00
10798.000	449.00	449.00	100.90	100.90	410.00	410.00
11084.000	449.01	449.00	231.99	.00	742.08	.00
11084.000	449.01	449.01	234.00	234.00	654.00	654.00
14086.000	449.64	449.56	40.05	.00	645.19	.00
14086.000	449.76	449.55	409.65	320.00	563.00	563.00

SECNO	EG	CWSEL	SSTA	STENCL	ENDST	STENCR
15286.000	450.62	450.60	13.34	.00	334.99	.00
15286.000	450.79	450.77	18.00	18.00	328.00	328.00

SUMMARY OF ERRORS AND SPECIAL NOTES

THIS RUN EXECUTED 12-01-88

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  HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
  ERROR CORR -  01,02,03,04,05,06
  MODIFICATION -  50,51,52,53,54,55,56
  IBM-PC-XT VERSION AUGUST 1985
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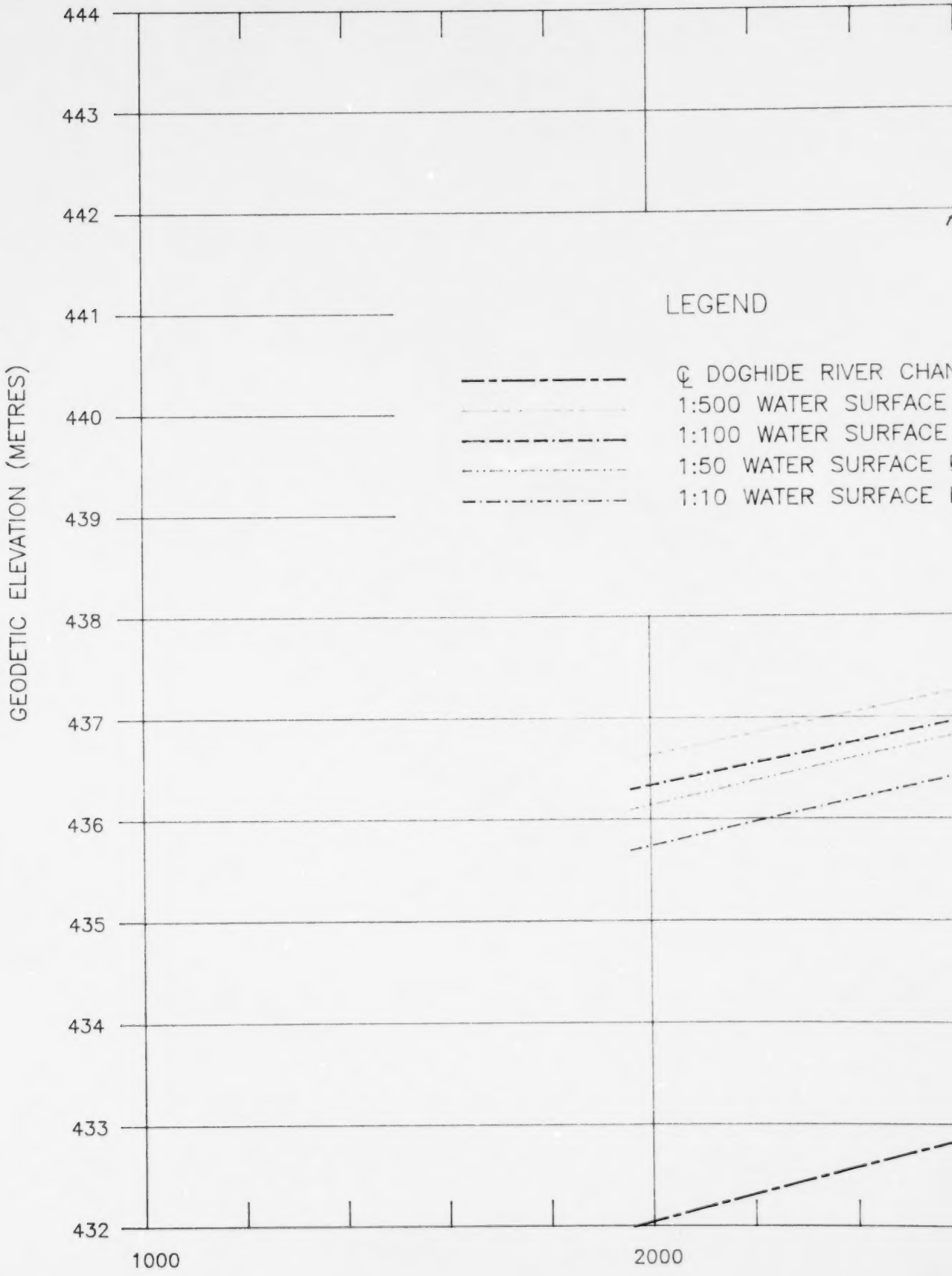
APPENDIX C

River Bed and Water Surface Profiles


444
443
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441
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439
438
437
436
435
434
433
432
GEODETIC ELEVATION (METRES)
LEGEND
℄ DOGHIDE RIVER CHAN
1:500 WATER SURFACE
1:100 WATER SURFACE
1:50 WATER SURFACE
1:10 WATER SURFACE
1000
2000

LEGEND

℄ DOGHIDE RIVER CHANNEL (BED)
1:500 WATER SURFACE PROFILE
1:100 WATER SURFACE PROFILE
1:50 WATER SURFACE PROFILE
1:10 WATER SURFACE PROFILE

OLD HIGHWAY 35 BRIDGE

HIGHWAY 35 BRIDGE

GRID ROAD BRIDGE

2000 3000 4000 5000 6000

STATION (METRES)

FIGURE C1 (Sheet 1 of 3)
CHANNEL AND WATER SURFACE PROFILES

LEGEND

℄ DOGHIDE RIVER CHANNEL (BED)
1:500 WATER SURFACE PROFILE
1:100 WATER SURFACE PROFILE
1:50 WATER SURFACE PROFILE
1:10 WATER SURFACE PROFILE

C.N.R. BRIDGE

GOLF COURSE BRIDGE

GEODETIC ELEVATION (METRES)

450
449
448
447
446
445
444
443
442
441
440
439
438

6000
7000
8000
9000

STATION (METRES)

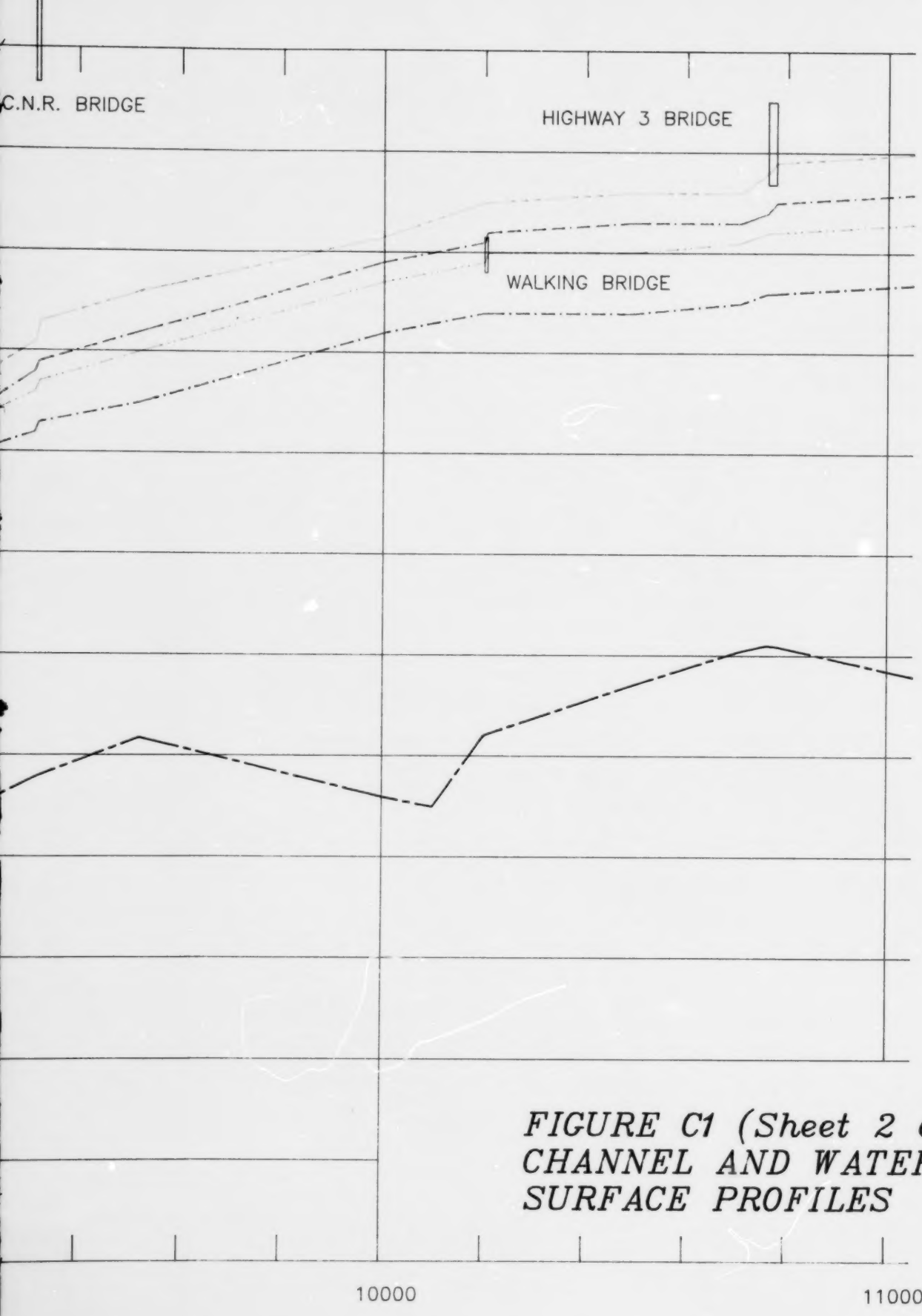
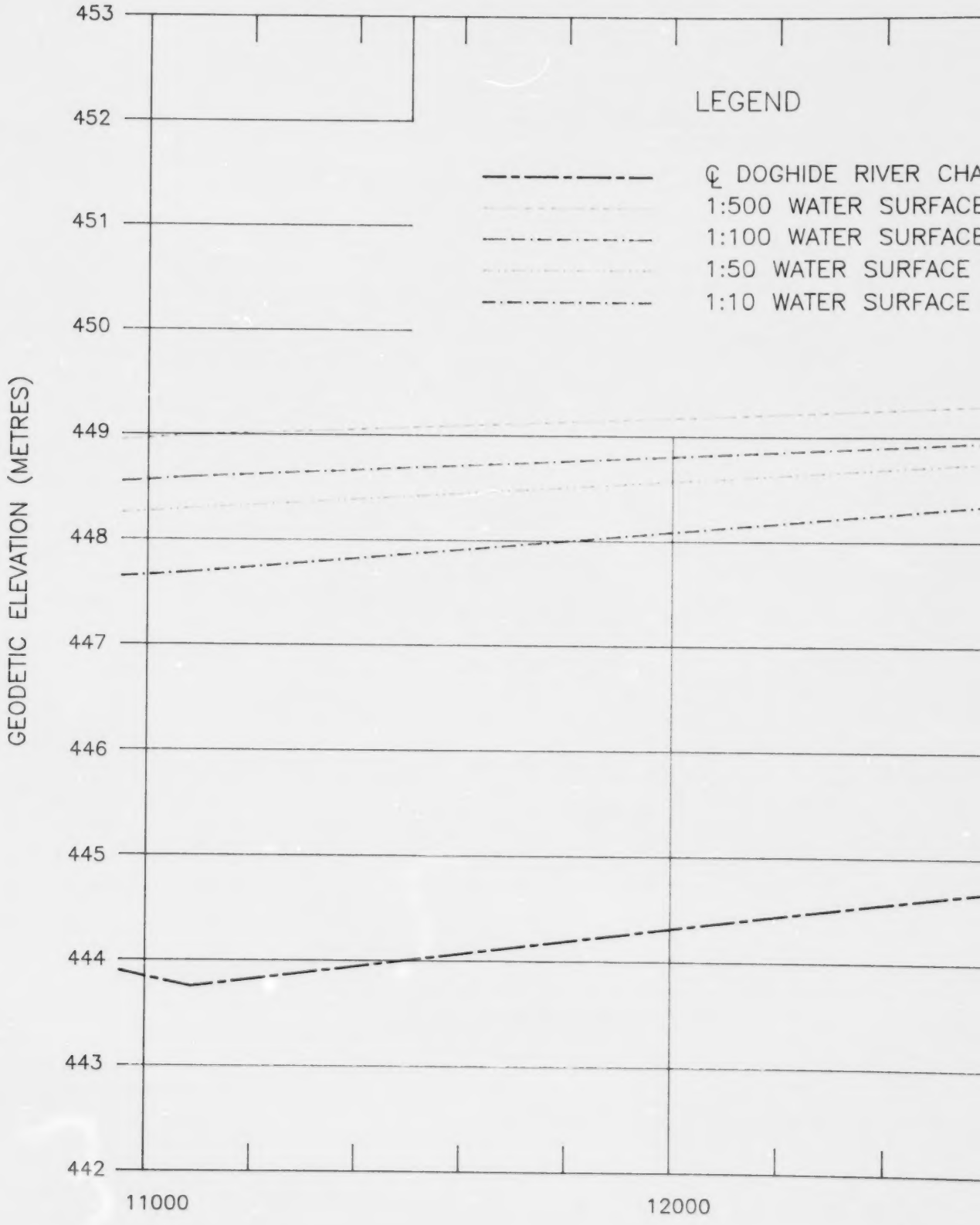


FIGURE C1 (Sheet 2 of 3)
CHANNEL AND WATER
SURFACE PROFILES


453
452
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450
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442
GEODETIC ELEVATION (METRES)
LEGEND
℄ DOGHIDE RIVER CHA
1:500 WATER SURFACE
1:100 WATER SURFACE
1:50 WATER SURFACE
1:10 WATER SURFACE
11000
12000

EGEND

℄ DOGHIDE RIVER CHANNEL (BED)
:500 WATER SURFACE PROFILE
:100 WATER SURFACE PROFILE
:50 WATER SURFACE PROFILE
:10 WATER SURFACE PROFILE

13000

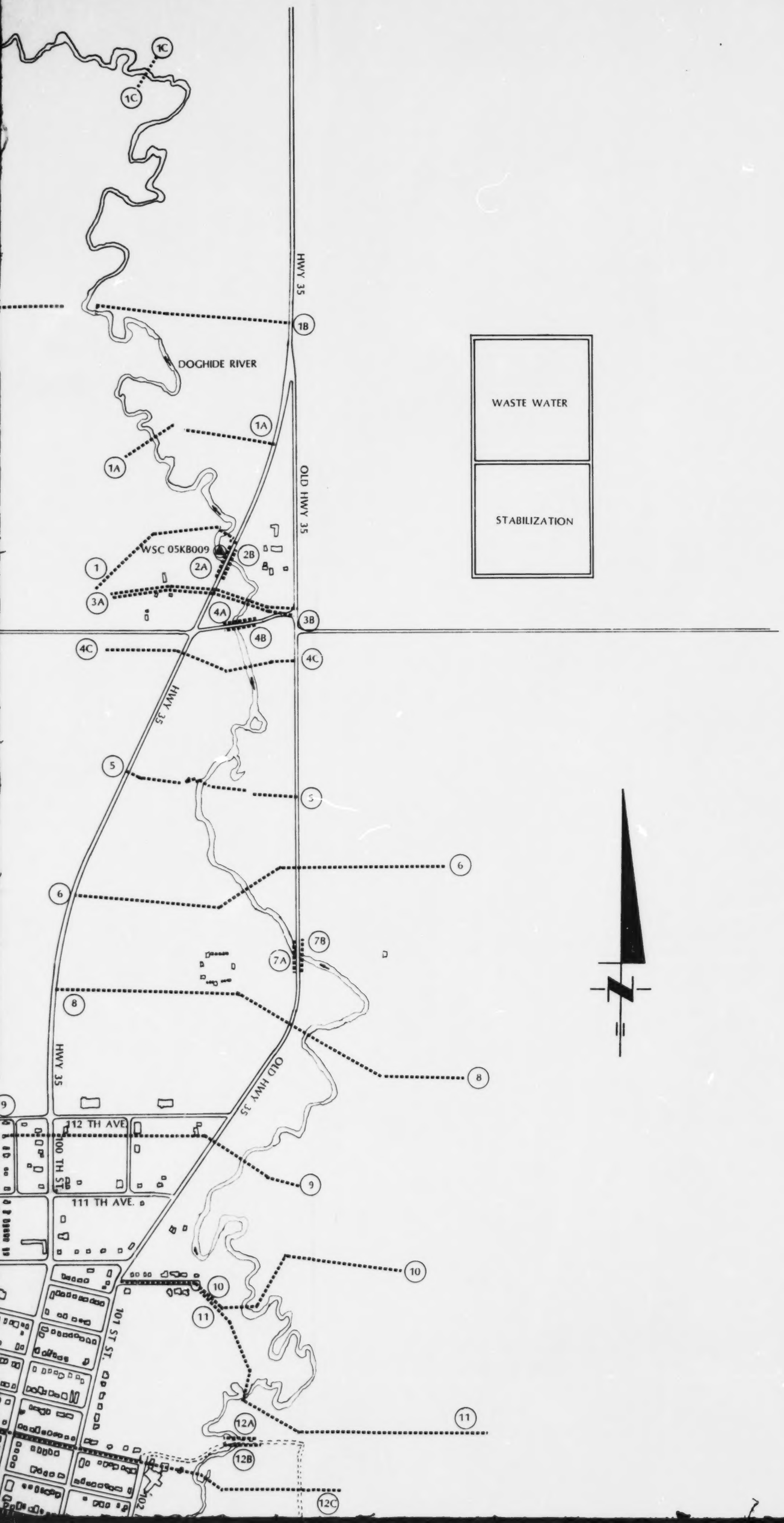
14000

15000

16000

STATION (METRES)

FIGURE C1 (Sheet 3 of 3)
CHANNEL AND WATER
SURFACE PROFILES


HWY 35
DOGHIDE RIVER
OLD HWY 35
WSC 05KB009
WASTE WATER
STABILIZATION
HWY 35
HWY 35
OLD HWY 35
112 TH AVE
100 TH ST
111 TH AVE.
101 ST ST.
102
1C
1B
1A
2B
2A
1
3A
4A
3B
4B
4C
5
6
7B
7A
8
9
10
11
12A
12B
12C

C.N.R.

HWY 3

DRIVE IN

DOGHIDE RIVER

TISDALE MUNICIPAL GOLF COURSE

TISDALE PARK

101 ST ST.

102 ND ST.

103 RD ST

99 TH AVE.

95 TH AVE.

C.P.R

HWY 35

DOGHIDE RIVER

WSC 05KB009

HWY 35

OLD HWY 35

HWY 35

100 TH ST.

101 ST ST.

102 ND

112 TH AVE.

111 TH AVE.

COLBURN CRESCENT

98 TH ST.

96 TH ST.

111 TH AVE.

NEWMARKET DR.

110 TH AVE.

105 TH AVE.

103 RD AVE.

C.P.R.

TISDALE MUNICIPAL GOLF COURSE

TISDALE PARK

102 ND ST.

101 ST ST.

102 ND ST.

103 RD ST.

100A ST.

100 TH ST.

98 TH ST.

99 TH AVE.

95 TH AVE.

94 TH AVE.

93 RD AVE.

103 RD AVE.

105 TH AVE.

110 TH AVE.

C.P.R.

HWY 35

C.N.R.

HWY 3

100 0 100 200 300 400 500

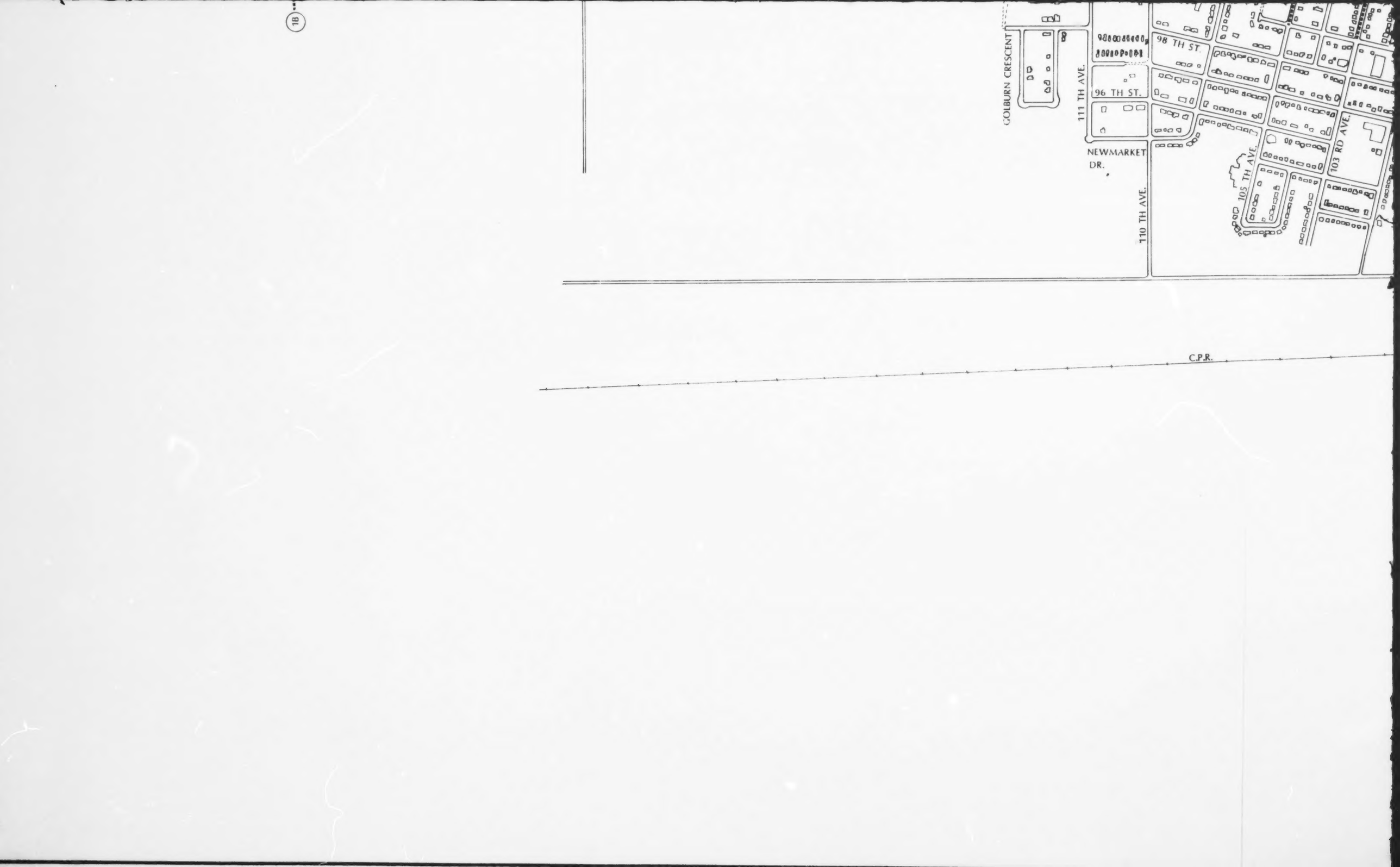
PREPARED BY

Stanley

STANLEY ASSOCIATES ENGINEERING LTD.

FOR

SASKATCHEWAN WATER CORPORATION


1B
GOLBURN CRESCENT
111 TH AVE.
96 TH ST.
98 TH ST.
NEWMARKET DR.
110 TH AVE.
105 TH AVE.
103 RD AVE.
C.P.R.

100 0 100 200 300 400 500

SCALE

PREPARED BY

Stanley

STANLEY ASSOCIATES ENGINEERING LTD.

FOR

SASKATCHEWAN WATER CORPORATION

TISDALE HYDRAULIC STUDY

STUDY AREA PLAN

Submitted by: A. SKIBINSKY	Date: FEB 2, 1987	Designed by:	Date:
Drawn by: J. BRANDT	Date: FEB 2, 1987	Checked by:	Date:
Recommended by:	Date:	Approved by:	Date:

No.	Date	Revision	By	App'd

Plan No.

Sheet of